Better Homes and Gardens®

WOOD®

THE #1 MAGAZINE FOR HOME WOODWORKERS

OCTOBER 1991 • ISSUE NO. 46
Display until October 15

CONTEST WINNERS Page 56
BUILD-A-TOY™

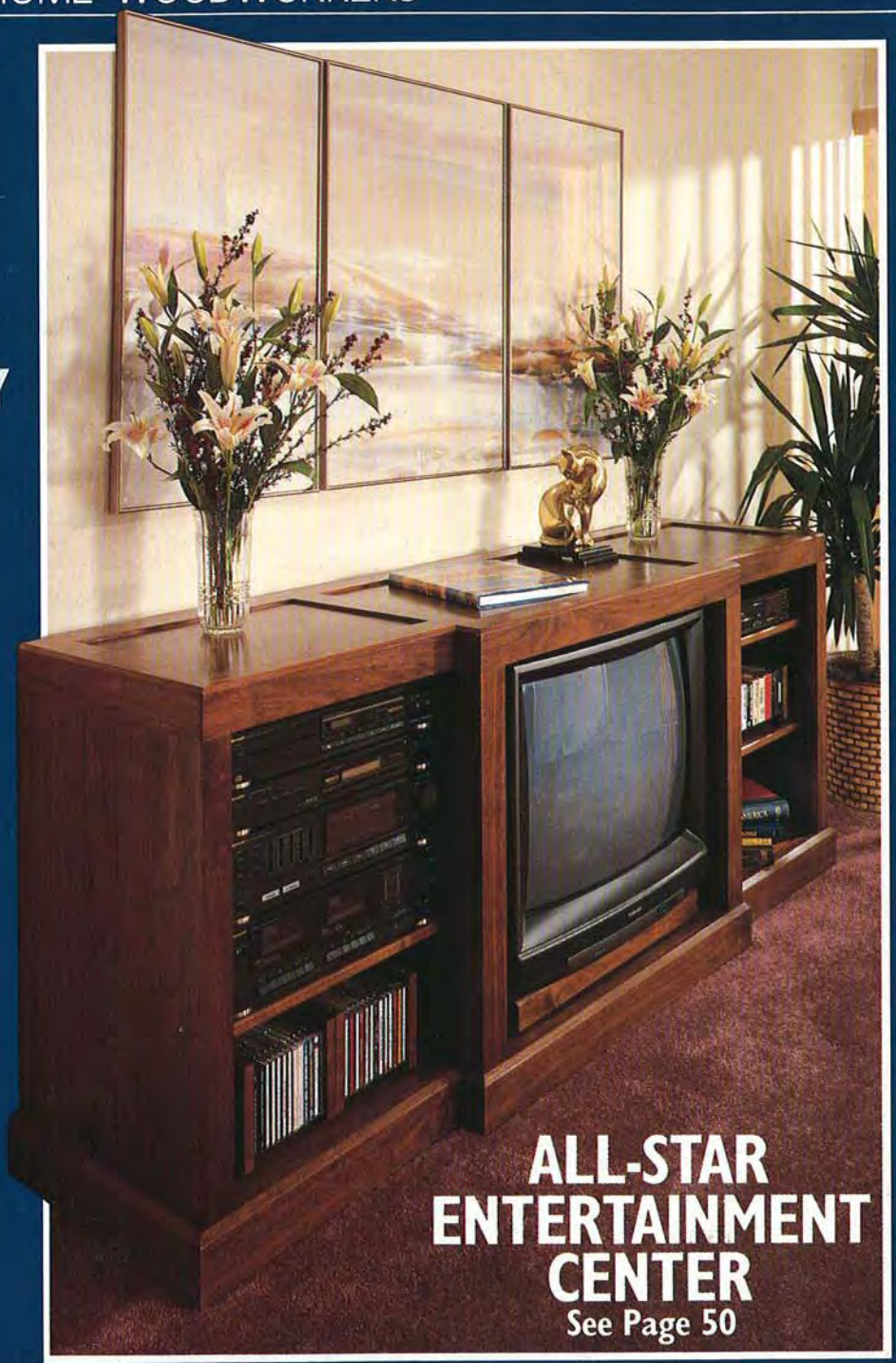
10 SHOP-SMART WAYS TO WORK WITH PLYWOOD

CARVE AN OTTER WITH DESIREE HAJNY

WOOD® LOOKS AT 29 DADO CUTTERS

MORE FUN PROJECTS!

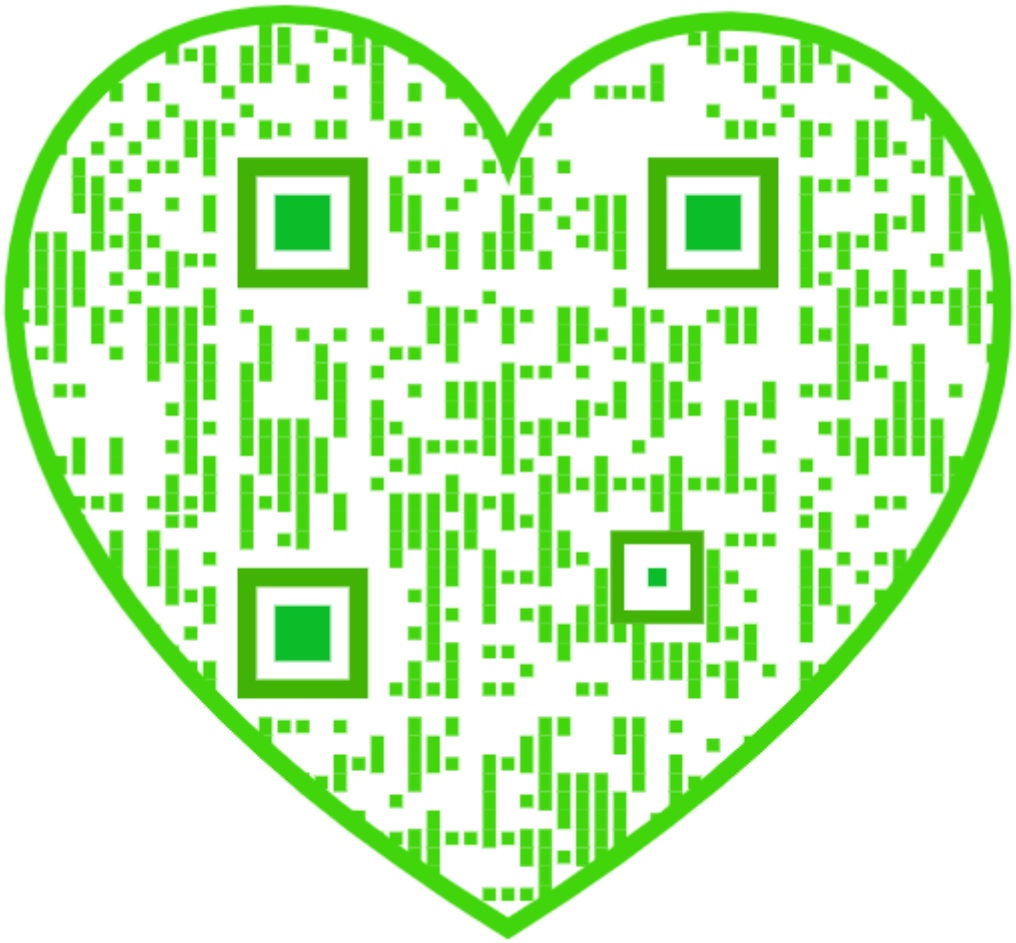
- Ash toboggan
- Noah's ark
- Toy floatplane
- Lotion dispenser
- Noodle cutter
- Key chains
- Turned mallet
- Family-feud cutout



ALL-STAR ENTERTAINMENT CENTER

See Page 50

10
14005 14072 2
U.S. $3.95



CHOICE CUTS. $349.

We figured it was time you moved up to stationary tools that are a cut above the rest. Time for Delta quality. The pros' choice. Your choice, 349 bucks.*

For starters, we're giving you two table saws and a band saw.

But to rip a perfect edge, you need to start with a perfect edge. So we added a jointer. For $349.

Now all those perfect boards are going to call for perfect holes. Yep, the perfect drill press.

You see, one choice tool leads to another. And another.

So your only decision is just where to start. It's your choice. Any one or several.

Call toll free for the name of your nearest dealer. Delta International Machinery Corp., 800/438-2486.

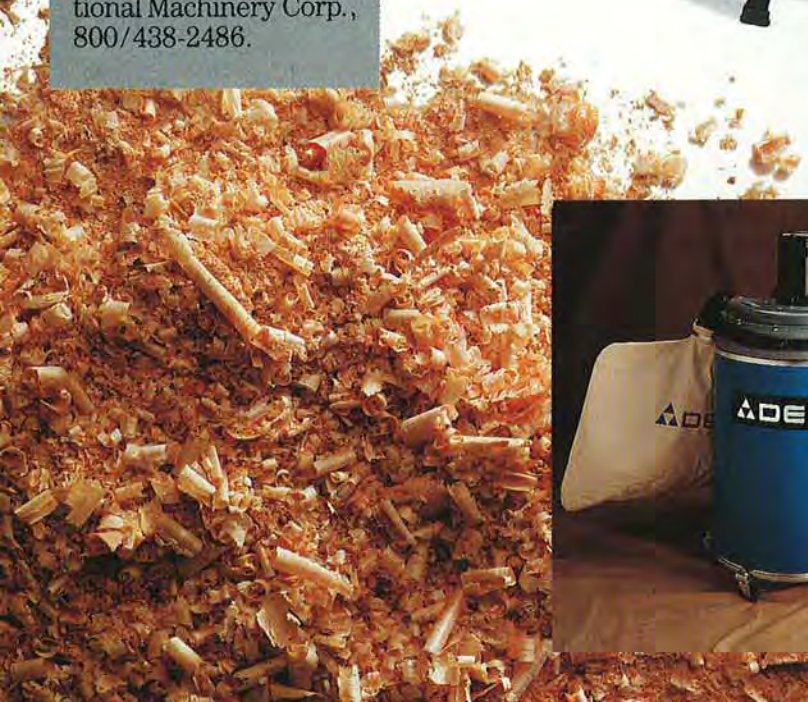
Our 16½" Drill Press gives you 12 speed options, locking depth stop, tilting table, ⅝" capacity chuck and lots of cast iron. Versatility and precision galore.

Our 16" Band Saw is a 3-wheel design for greater capacity; cuts up to 8" thick ×16" wide. Tilting table for bevel cutting.

Our 10" Table Saw has a powerful 15 Amp, universal series motor and exclusive belt drive. And many of the same features as the Super 10. Your Delta dealer can help you decide which saw is best for you.

Our Super 10 Saw has a quiet 1 HP induction motor. It features a 22¼" × 38⅜" table, single lever rip fence, miter gage and see-thru blade guard.

The Delta 6" Jointer with three-knife cutterhead and large cast iron table gives you a precision edge. Comes with steel stand.



All that quality dust, from all those quality cuts...you might as well go Delta Quality all the way, and breathe easy. Here's a powerful two-stage, industrial quality, portable Dust Collector.

*Offer good only from participating dealers in the continental U.S., Alaska and Hawaii, from September 1, 1991 thru March 31, 1992.

Building On Tradition

DELTA

A Pentair Company

THE EDITOR'S ANGLE

DON'T TOSS THAT OLD TV CABINET

A couple of years ago, my wife Trudy looked at our aging television console and asked, "is there any way you could slip a new TV into the opening where the old set is?" My response: "Impossible." I was planning my annual Canadian fishing trip, and the last thing I wanted was another project.

But that was then, and this is now. As you can see in the photo *above*, I'm "almost through" proving to my wife once again that I can do the impossible.

Why the sudden change of heart? It all started one morning when I poked my head into the *WOOD*® magazine shop. There stood Jim Boelling, building the entertainment center that we feature on *page 50*. From the moment I saw it, I couldn't help but think we were re-engineering a concept that enjoyed enormous popularity in the '60s and early '70s —console entertainment centers.

I'm sure you remember them—impressive wood cabinets that housed vacuum-tube television sets. You still can find these wonderful cabinets today, quite possibly in your own living room or family room, though more often than not the TV has long since gone on the fritz. And because the cabinet looks too good to toss, you set your 19″ color television, and maybe a VCR, on top of it.

Anyway, that's why I'm giving our console a new lease on life. As it turns out, gutting the old unit proved easy. It took less than 30 minutes to remove the picture tube, trim pieces, and the other nameless parts you see here. And it doesn't look like it's going to take much longer than that to tailor the opening to the new TV set.

So if you're one of the thousands who kept an entertainment console around the house, you may want to try this idea yourself. In an upcoming issue, I'll share more of the particulars on retrofitting these aging beauties.

Larry Clayton

Photograph: John Hetherington

EDITORIAL MAILING ADDRESS: *WOOD* magazine, P.O. Box 11454, Des Moines, IA 50336-1454.
SUBSCRIPTION SERVICE (including change of address): *WOOD* Customer Service, P.O. Box 10628, Des Moines, IA 50336-0628. Please enclose your address label from a current issue. If you wish, call toll-free 800/374-9663.
CUSTOMER-SERVICE TEAM: Supervisor Chris Warwick, Marjene Cline, Velma Williams.

End of Summer SALE

EXPIRES 10-25-91

2-3/4" Spoke Wheel	$ 1.00 / EA	$ .80 / EA
1" Wheel	$ 6.00 / 100	$ 4.00 / 100
1-1/4" Wheel	$ 8.00 / 100	$ 5.50 / 100
1-1/2" Wheel	$10.00 / 100	$ 7.50 / 100
2" Wheel	$18.00 / 100	$15.50 / 100
Axle peg for above pegs	$ 5.00 / 100	$ 3.00 / 100
2-3/8" Little Man	$18.00 / 100	$16.00 / 100
1" Treaded Tire	$10.00 / 100	$ 8.00 / 100
1-1/4" Treaded Tire	$12.00 / 100	$10.50 / 100
1-1/2" Treaded Tire	$14.00 / 100	$13.00 / 100

1-3/8" Candle Cup	$18.00 / 100	$13.50 / 100
5/8" Candle Cup	$10.00 / 100	$ 8.50 / 100
3-1/2" Shaker Peg	$15.00 / 100	$11.50 / 100
2-7/16" Medium Peg	$14.00 / 100	$11.00 / 100
1-3/4" Mini Peg	$ 7.50 / 100	$ 5.00 / 100
3/8" or 1/2" Birch Button	$ 2.00 / 100	$ 1.50 / 100
1-1/2" Spindle	$10.00 / 100	$ 8.00 / 100
2" Spindle	$14.00 / 100	$12.50 / 100
5-3/4" Spindle	$ .50 / EA	$ .40 / EA

1-5/8" Sawtooth Hanger	$ 4.00 / 100	$ 3.00 / 100
2-3/4" Sawtooth Hanger	$ 4.50 / 100	$ 3.50 / 100
5/8" Picture Hanger	$ 2.00 / 100	$ 1.50 / 100
1-7/8" Picture Hanger	$ 4.50 / 100	$ 4.00 / 100
3/8" Bead	$ 3.25 / 100	$ 3.00 / 100
1/2" Bead	$ 3.50 / 100	$ 3.25 / 100
5/8" x 3/4" Spool	$ 5.00 / 100	$ 4.50 / 100
3/4" x 1" Spool	$ 6.50 / 100	$ 6.00 / 100
1-1/4" x 1/4" Heart	$ 7.50 / 100	$ 6.50 / 100
2-1/2 x 1/4" Heart	$ 5.50 / 25	$ 5.00 / 25
2-1/2" Hen Egg	$12.50 / 25	$10.50 / 25
4-1/4" Goose Egg	$ 3.00 / EA	$ 2.50 / EA

1-800-722-0311

To receive sale prices use Sale ***B61***

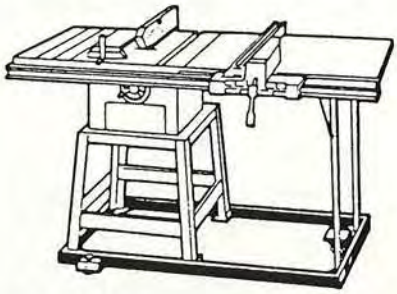
FREE With Order — **ALL NEW WOOD PARTS CATALOG $1.00**

We accept M/C, VISA Check, or M.O. All orders add $4.00 Handling TX add 7% tax. Canada add 30% Alaska, Hawaii add 15% for freight.

Woodworks

P.O. Box 14507 Ft. Worth, TX 76117

Mobile Machine Bases
to put your entire shop on wheels



* Hundreds of Models available
* 3 - 2½" Ø Wheels for Stability
* Dual wheel locks for Positive Positioning
* Raises machine only 3/4"
* All Steel & Precision Welded
* Lifetime Warranty
* Made in America

Free Catalog

HTC Products, Inc.
120 E. Hudson • P.O. Box 839
Royal Oak, Michigan 48068-0839

(313) 399-6185 • **(800) 624-2027**

Create A Family Treasure with Kuempel Chime Red-i-Kut Kits

- Each case carefully handcrafted by grandfathers
- ¾" solid walnut, cherry or oak
- Precision movements – chime rods or tubular bells
- Handcrafted pendulums
- Individually hand-painted moonwheels
- Plans, kits, and finished clocks

Write or Call for Catalog $3.00

1-800-328-6445
Between 8 a.m. and 4 p.m. CST

Our 75th Year!

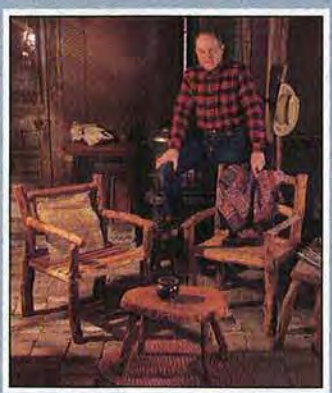
Kuempel Chime
Dept. 028, 21195 Minnetonka Blvd.
Excelsior, MN 55331

Better Homes and Gardens®
WOOD®
THE #1 MAGAZINE FOR HOME WOODWORKERS

This issue's cover wood grain: bird's-eye maple *Cover photo: Hopkins Associates*

OCTOBER 1991 ISSUE NO. 46

WOOD PROFILE
Teak: The tropics' top seafaring stock 33
Serving both indoor and outdoor uses, this tough, attractive wood takes five years to arrive at market from its Southeast Asian rain forest origins.



CRAFTSMAN CLOSE-UP
Hedge rustic 35
When Kansas craftsman Bud Hanzlick travels through farm country and spies a row of Osage orange trees, he sees a porch full of rustic Adirondack-style furniture.

CARVING
Here's Otto 40
Once again, renown carver Desiree Hajny has provided us with an exclusive wildlife carving. If you liked Roscoe the Raccoon, you'll love Otto.

SHOP-TESTED TECHNIQUES
10 winning ways to work with plywood 44
When cutting, routing, and edging, seasoned woodworkers know that plywood needs special care. Get great results with these handy tricks.

All-star media center 50
Stereo components, a 27" TV (or smaller), a videocassette recorder, tapes, and discs all fit comfortably in this handsome, multifunctional walnut cabinet.

Oh my, what a contest 56
With our 1991 Build-A-Toy contest over, it's time to see the winners from among 439 made-with-love toy entries.

Sea skipper 58
Scrollsawers, you'll enjoy cutting out, painting, and assembling this wonderfully simple and colorful floatplane. It's from our Build-A-Toy contest.

TOOL BUYMANSHIP
Dado-cutting tools 60
Don't spend a dime on a cutter for rabbets, grooves, and dadoes until you see what our tests revealed. The tool options and quality differences will surprise you.

Bentwood toboggan 66
Expect great family fun in the winter sun from this downhill ash sled. Cushion the ride with a customized four-person pad from our source.

Slow-set epoxy 71
Learn how to work with this mighty weather-resistant glue.

Noodle cutter 72
Roll in the dough with this turned kitchen utensil.

THE CRAFT SHOP
Pump dispenser 74
Make the perfect container for hand lotions and soaps.

Noah's lovable ark 76
Take a few evenings or a weekend to make this charming biblical boat.

Letter-perfect key chain 79
Our patterns let you make key chains for every name in the alphabet.

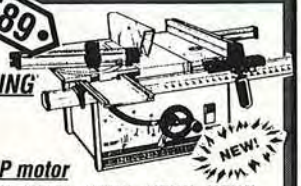
Resaw Jig 80
Now, cut thin stock safely and efficiently with this handy helper.

SHORT-SUBJECT FEATURES

Editor's Angle	1	Tips From Your Shop	20
Turned Wood Mallet	6	Products That Perform	28
Talking Back	8	Ask *WOOD*®	84
Great Ideas For Your Shop	15	Yesterday's Tools	90
Family-Feud cutout	18	Finishing Touches	96

RYOBI

10" PORTABLE PLANER #AP10 •338



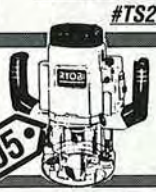
10" PRECISION WOODWORKING SYSTEM #BT3000 • 13 amps, 2 HP motor •589 NEW!

NEW! NEW! NEW! NEW! NEW! NEW!

12 VOLT TORQUEFORCE V.S. DRILL KIT WITH EXTRA BATTERY #TFD2202VRK •169

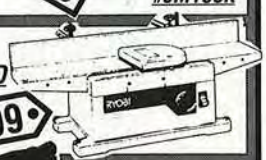
4-1/2" V.S. DUSTLESS RANDOM ORBITAL SANDER #RS115 NEW! •78

10" SUPER MITRE SAW WITH CARBIDE TOOTH BLADE #TS254 NEW! •209



3 HP V.S. ELECTRONIC PLUNGE ROUTER #RE600 •205

PLATE JOINTER WITH CASE #JM100K •209



6-1/8" VARIABLE SPEED JOINTER #JP-155 •299

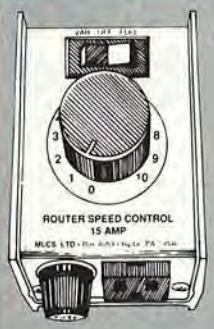
4X24 VARIABLE SPEED BELT SANDER #BE424 •165

8-1/4" RADIAL ARM SAW #RA200 •238

TOOL CRIB OF THE NORTH
DIVISION OF Emco Electric
P.O. Box 1716
Grand Forks ND 58206
Send $2.00 for 186 page catalog
1-800-358-3096
Free Freight * Limited Offer * Same Day Shipping

MLCS Ltd.

While in the Phila. Area
Visit Our Fully Stocked Showroom.
(Call for easy directions — 8:30-5:00, M-F)



CONTROL THE SPEED OF YOUR ROUTER

ROUT AT THE SPEED THAT GIVES THE BEST RESULTS WITH THE WOOD AND BIT YOU ARE USING!

FEATURES:

- Speed Adjustable from Full Speed to 0 RPM
- Full Horsepower and Torque at All Speeds
- Go Back and Forth from Any Pre-Set Speed to Full Speed at the Flip of a Switch
- Works with All Routers 3¼ HP or Less
- 120V 15 Amp
- Gives Your Router a Feature Only Available on Routers Costing Hundreds of Dollars!

NOW ONLY $39.95
Order Item #200

EASY TO USE - Simply plug in Speed Control and plug your router into the Speed Control - turn dial for best results. (Speed Control has a clip that can be worn on your belt or hung on wall or left loose.)

- Reduces speed electronically without reducing torque; electronic feed-back maintains speed by increasing voltage to motor as load increases.

CARBIDE TIPPED ROUTER BITS PROFESSIONAL PRODUCTION QUALITY *GUARANTEED*

WHEN ORDERING ANY THREE OR MORE DEDUCT $1.00 EACH. ALL PRICES ARE *POSTAGE PAID*

ITEM NO.	BEST CUT BEST PRICE	DESCRIPTION	ANGLE/DEPTH/RADIUS CIRCLE DIAMETER	LARGE DIA.	CUTTING LENGTH	SHANK SIZE	PRICE
#601		1/8" Spiral Cutter		1/8"	1/2"	1/4" *	$ 9.00
#602		3/16" Spiral Cutter		3/16"	5/8"	1/4" *	$12.00
#603	Solid Carbide	1/4" Spiral Cutter		1/4"	3/4"	1/4"	$12.00
#903		1/4" Spiral Cutter		1/4"	3/4"	1/2" *	$12.00
#904		3/8" Spiral Cutter		3/8"	1"	1/2" *	$24.00
#905		1/2" Spiral Cutter	*Proper Adaptor Will Be Supplied	1/2"	1 1/2"	1/2"	$29.00
#350		1/8" Round Over	1/8" R	3/4"	3/8"	1/4"	$11.00
#351		3/16" Round Over	3/16" R	7/8"	1/2"	1/4"	$11.00
#230		1/4" Round Over	1/4" R	1"	1/2"	1/4"	$12.00
#353		5/16" Round Over	5/16" R	1 1/8"	1/2"	1/4"	$14.00
#209		3/8" Round Over	3/8" R	1 1/4"	5/8"	1/4"	$15.00
#355		1/2" Round Over	1/2" R	1 1/2"	3/4"	1/4"	$17.00
#656		3/4" Round Over	3/4" R	2"	7/8"	1/2"	$21.00
#199		Multiform Moulding	Unlimited Patterns	2 1/4"	2"	1/2"	$40.00
#340		1/8" Cove	1/8" R	5/8"	3/8"	1/4"	$12.00
#205		1/4" Cove	1/4" R	1"	1/2"	1/4"	$12.00
#206		3/8" Cove	3/8" R	1 1/4"	9/16"	1/4"	$13.00
#207		1/2" Cove	1/2" R	1 1/2"	5/8"	1/4"	$14.00
#208		3/4" Cove	3/4" R	1 7/8"	3/4"	1/2"	$26.00
#460		1/4" Bull Nose	1/4" Dia. of Circle		3/8"	1/4"	$14.00
#461		3/8" Bull Nose	3/8" Dia. of Circle		3/4"	1/4"	$15.00
#462		1/2" Bull Nose	1/2" Dia. of Circle		7/8"	1/4"	$16.00
#464		3/4" Bull Nose	3/4" Dia. of Circle		1 1/8"	1/4"	$21.00
#506		1/2" Pattern	Flush Trim	1/2"	1"	1/4"	$15.00
#507		5/8" Pattern	Flush Trim	5/8"	1"	1/4"	$16.00
#508		3/4" Pattern	Flush Trim	3/4"	1"	1/4"	$17.00
#366		1/8" Slot Cutter	3/8" Deep	1 1/4"	1/8"	1/4"	$14.00
#368		1/4" Slot Cutter	3/8" Deep	1 1/4"	1/4"	1/4"	$14.00
#204		3/8" Rabbeting	3/8" Deep	1 1/4"	1/2"	1/4"	$13.00

New 32-page catalogue now available, featuring hundreds of bits.

ITEM NO.	BEST CUT BEST PRICE	DESCRIPTION	ANGLE/DEPTH/RADIUS CIRCLE DIAMETER	LARGE DIA.	CUTTING LENGTH	SHANK SIZE	PRICE
#210		1/4" Core Box	round nose	1/4"	1/4"	1/4"	$ 9.00
#211		3/8" Core Box	round nose	3/8"	3/8"	1/4"	$10.00
#212		1/2" Core Box	round nose	1/2"	11/32"	1/4"	$13.00
#418		3/4" Core Box	round nose	3/4"	5/8"	1/4"	$15.00
#213		1" Core Box	round nose	1"	3/4"	1/2"	$17.00
#214		1/4" Straight	plunge cutting	1/4"	3/4"	1/4"	$ 6.50
#215		5/16" Straight	plunge cutting	5/16"	1"	1/4"	$ 6.50
#216		3/8" Straight	plunge cutting	3/8"	1"	1/4"	$ 6.50
#217		7/16" Straight	plunge cutting	7/16"	1"	1/4"	$ 6.50
#474		1/2" Straight	plunge cutting	1/2"	1"	1/4"	$ 7.00
#775		1/2" Straight	plunge cutting	1/2"	2"	1/2"	$14.00
#218		5/8" Straight	plunge cutting	5/8"	1"	1/4"	$ 7.00
#219		3/4" Straight	plunge cutting	3/4"	1"	1/4"	$ 9.50
#220		1" Straight	plunge cutting	1"	1 1/2"	1/2"	$11.00
#500		3/8" Flush Trimming		3/8"	1/2"	1/4"	$ 7.00
#502		1/2" Flush Trimming		1/2"	1/2"	1/4"	$ 7.50
#503		1/2" Flush Trimming		1/2"	1"	1/4"	$ 8.50
#221		1/2" Flush Trimming		1/2"	1 3/16"	1/2"	$ 8.00
#545		Tongue & Groove	Straight	1 5/8"	1"	1/4"	$29.00
#845		Tongue & Groove	Straight	1 5/8"	1"	1/2"	$29.00
#546		Tongue & Groove	Wedge	1 3/16"	1"	1/4"	$29.00
#846		Tongue & Groove	Wedge	1 5/8"	1"	1/2"	$29.00
#450		1/8" Beading	1/8" R	3/4"	3/8"	1/4"	$11.00
#451		3/16" Beading	3/16" R	7/8"	1/2"	1/4"	$11.00
#233		1/4" Beading	1/4" R	1"	1/2"	1/4"	$13.00
#453		5/16" Beading	5/16" R	1 1/8"	1/2"	1/4"	$14.00
#454		3/8" Beading	3/8" R	1 1/4"	5/8"	1/4"	$15.50
#455		1/2" Beading	1/2" R	1 1/2"	3/4"	1/4"	$17.00
#530		3/16" Edge Beading	3/16" Dia. of Circle		1/2"	1/4"	$15.00
#531		5/16" Edge Beading	5/16" Dia. of Circle		1/2"	1/4"	$15.50

MAKE BEAUTIFUL RAISED PANEL DOORS WITH YOUR . . . 1/4" or 1/2" ROUTER . . . 1/2" or 3/4" SHAPER

Professional production quality bit makes it quick and easy to produce matching rails and stiles — the panel raising bit with ball bearing guide makes the raised panel perfect every time.

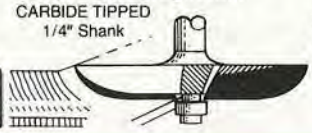
SALE PRICE FOR COMPLETE SET $69.95 Regular value over $150.00!

1/4" Shank set item #554 (includes all bits shown below)

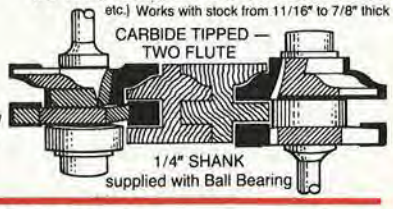
SET ALSO AVAILABLE IN ½" SHANK - $79.95 - Item #852

Shaper Cutters set: Item #1059
SAVE! only **$99.95**
Set: Rail & Stile & Raised Panel Cutters

RAISED PANEL BIT
SUPPLIED WITH BALL BEARING



REVERSIBLE COMBINATION RAIL and STILE BIT
(For making matching rails and stiles in raised panel doors, etc.) Works with stock from 11/16" to 7/8" thick



To order by Master Charge or Visa Call Toll Free, 7 Day - 24 Hour Order Service,
1-800-533-9298 or send check to: **MLCS Ltd., P.O. Box 4053DA, Rydal, PA 19046**

©1990

Better Homes and Gardens®
WOOD®
THE #1 MAGAZINE FOR HOME WOODWORKERS

October 1991 • Vol. 8, No. 7 • Issue No. 46

Editorial/Art Staff

Editor **LARRY CLAYTON**
Managing Editor **JIM HARROLD**
Art Director **C. L. GATZKE**
Assistant Art Director **PERRY A. McFARLIN**
Design Editor **JAMES R. DOWNING**
Senior Editor **PETER J. STEPHANO**
How-To Editor **MARLEN KEMMET**
Products/Techniques Editor **BILL KRIER**
Special-Interest Editor **LARRY JOHNSTON**
Copy/Production Editor **JOHN D. HOFHEIMER**
Project Builder **JAMES E. BOELLING**
Administrative Assistant **DARLENE REYNOLDS**
Business Office Clerk **MARGARET CLOSNER**
Secretary **ROSEMARIE BURCH**

Technical Consultants: Product Testing **GEORGE GRANSETH, BOB McFARLIN;** Products That Perform **STEVE OSWALT;** Wood Technology **PAUL L. McCLURE;** Collectible Tools **PHILIP WHITBY;** Carving **HARLEY J. REFSAL**

Publisher **WILLIAM R. REED**
New York Advertising Manager **CHRIS W. SCHRAFT**
Advertising Representatives **CRAIG KAPLAN, DARRYL HUDSON**
Promotion/Research Director **EILEEN SULLIVAN**
Advertising/Marketing Services Manager **SIGRID FOLKERS**
Publisher's Assistant **NANCY LOPEZ**
ADVERTISING OFFICES: 750 Third Ave., New York, NY 10017. Phone 212/551-6903.

Circulation Manager **ALAN BRUSH**
Newsstand Circulation Director **MICHAEL SENIOR**
Business Manager **TERRY UNSWORTH**
Production Director **ROBERT C. FURSTENAU**
Public Relations **SONDY DAGGETT**
Special Projects **JAY BURZON**

Magazine Group Officers

Group President **JAMES A. AUTRY**
SVP, Publishing Director **ADOLPH AUERBACHER**
SVP, Editorial Director **DORIS EBY**
SVP, Operations **DEAN PIETERS**
Group VPs: Publishing Directors **MYRNA BLYTH, BURTON H. BOERSMA, CHRISTOPHER M. LEHMAN**
Group VP, Circulation Director **CLEM SEVDE**
Controller **MAX RUNCIMAN**

Corporate Officers

Chairman of Executive Committee **E.T. MEREDITH III**
Chairman of the Board **ROBERT A. BURNETT**
President and Chief Executive Officer **JACK D. REHM**
Group Presidents: Broadcasting **PHILIP A. JONES;** Magazine **JAMES A. AUTRY;** Real Estate **ALLEN SABBAG**

Better Homes and Gardens® WOOD® — the #1 magazine for home woodworkers (ISSN-0743-894X) is published nine times a year in January, February, April, June, August, September, October, November, and December by Meredith Corporation, 1716 Locust St., Des Moines, IA 50336. Second-class postage paid at Des Moines, Iowa. Better Homes and Gardens trademark registered in Canada and Australia. Marca Registrada en México. **ONE-YEAR SUBSCRIPTION PRICES:** U. S. and its possessions, $24.97; Canada, $34; other countries, $38. **POSTMASTER:** Send address changes to WOOD, 1716 Locust St., Des Moines, IA 50336.
©COPYRIGHT MEREDITH CORPORATION 1991. ALL RIGHTS RESERVED. PRINTED IN U.S.A.
Canadian GST Reg. #R123482887.
MPA

Try Your Hand at This Quick and Easy Holiday Woodworking Project

Whether an experienced or beginning woodworker, you'll find making these 3' by 4' reindeer a quick and easy project that will bring rave reviews from family and friends. Turn out a bundle for holiday gifts, sophisticated lawn ornaments or even unique indoor accents. Full-size patterns speed the process, while special tips and hints from the WOOD® magazine experts ensure a professional result. Order the plan today so that you'll have plenty of time to build your herd before the holidays.

Yes! I want to build these splendid reindeer

Name_____

Address_____

City_____ State_____ Zip_____

❑ Enclosed is my check or money order for $7.95 (U.S.). including postage and handling, made out to WOOD Magazine.

Please bill my ❑ MASTERCARD ❑ VISA Card #_____

Exp.Date_____ Signature_____

MAIL TO: REINDEER PROJECT PLAN, P.O. Box 9255, Dept. W-1, Des Moines, IA 50306.
Allow four weeks for delivery...**100% MONEY-BACK GUARANTEE** if not completely satisfied.

SCROLLVERGNÜGEN*

*VERGNÜGEN: A German noun meaning delight or pleasure.
HEGNER - the precision scroll saw consistently rated #1.
Smooth • Easy • Versatile • Fun • Reliable

Now on sale starting at only $399! Ask for free information!

☎ 1·302·322·2226 ☎

❑ Please send free information on HEGNER Precision Scroll Saws. 460

Name _____

Address _____

City, State _____

Phone _____ Zip_____

ADVANCED MACHINERY IMPORTS
P.O. Box 312, Dept. 465
New Castle, DE 19720
FAX 302•322•3479

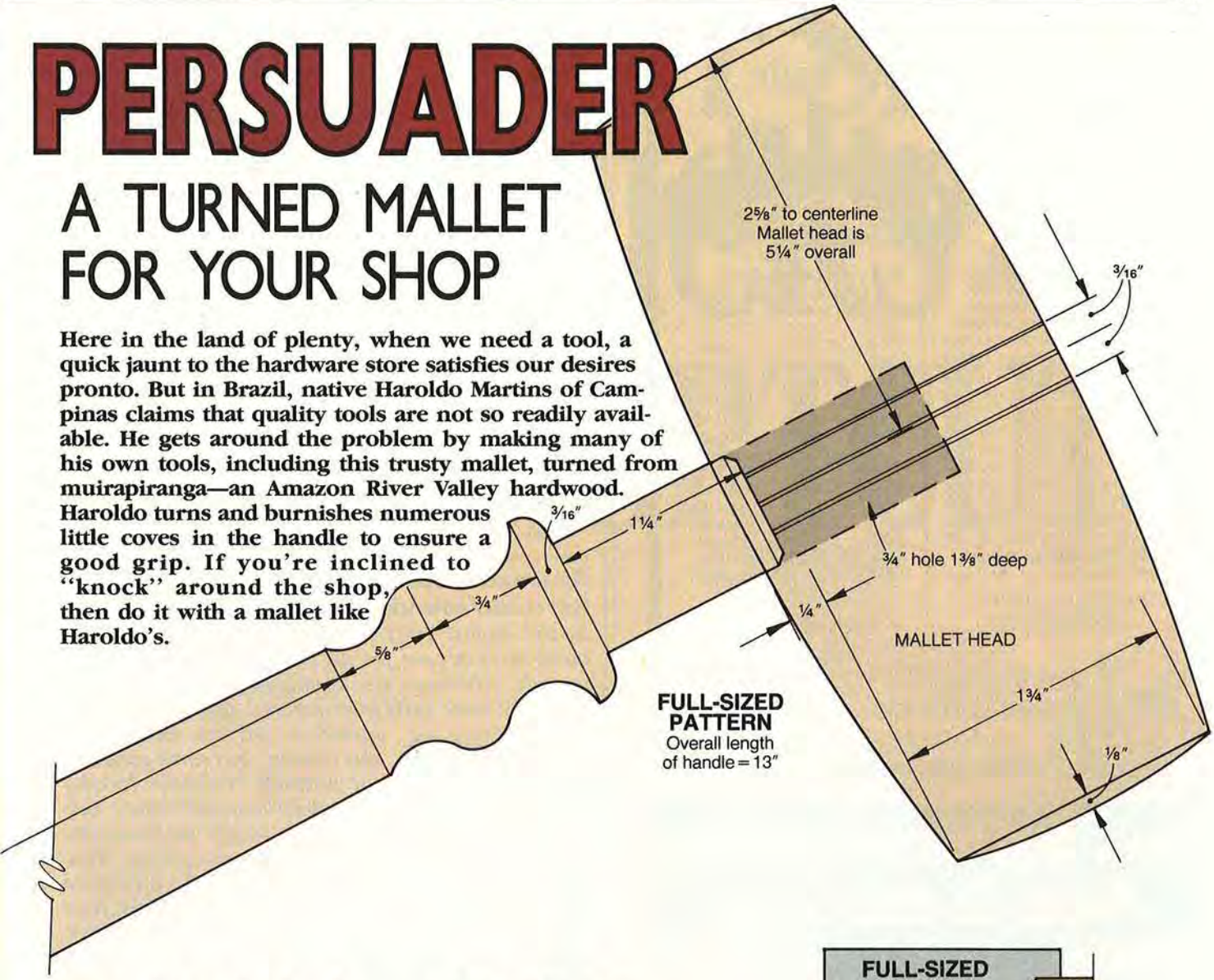
Print this article

THE FRIENDLY

PERSUADER

A TURNED MALLET FOR YOUR SHOP

Here in the land of plenty, when we need a tool, a quick jaunt to the hardware store satisfies our desires pronto. But in Brazil, native Haroldo Martins of Campinas claims that quality tools are not so readily available. He gets around the problem by making many of his own tools, including this trusty mallet, turned from muirapiranga—an Amazon River Valley hardwood. Haroldo turns and burnishes numerous little coves in the handle to ensure a good grip. If you're inclined to "knock" around the shop, then do it with a mallet like Haroldo's.



Start with mallet head

1 To shape the mallet head, mount a 2½"-square piece of stock between centers, and turn it round using a ½" gouge. (See the full-sized Mallet Head drawing for reference.)

2 Using calipers and the dimensions shown *above*, taper the ends of the mallet head, and form a very slight convex surface on each end. This helps prevent the head from denting the furniture components during assembly.

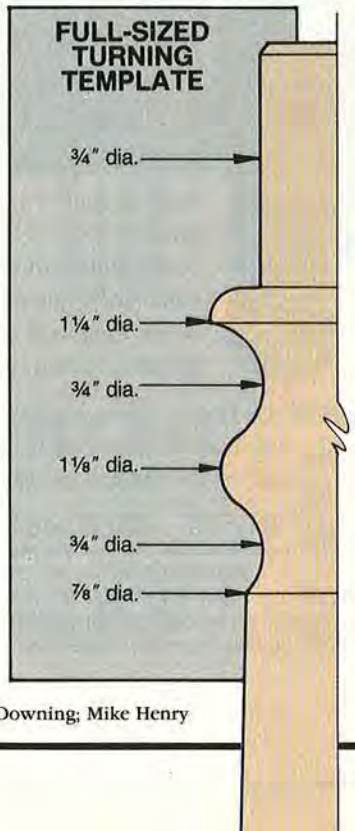
3 Remove the head from the lathe, and drill a ¾" hole 1⅜" deep and centered between the ends to accommodate the handle tenon later. (We secured the head with a handscrew clamp during the drilling operation.)

Coming to grips with the handle

1 Mount a piece of 1½"-square stock 14" long between centers, and turn the handle blank round. Taper the handle, form the tenon, and then shape coves where shown on the drawing at *right*.

2 Form the handle grip by marking the groove locations, and making shallow cuts with the tip of a parting tool or skew. Next, with the lathe running at about 3,000 rpm, hand-hold a portion of a 12"-long piece of wire against—but not wrapped around—each V-cut until the wire gets hot enough to singe the wood.

3 Finish the mallet as desired. (Haroldo relies on an American favorite, polyurethane.)



Project Design: Haroldo Martins, Campinas, Brazil Photograph: Hopkins Associates Illustrations: Kim Downing; Mike Henry

Buy Direct From The Manufacturer And **SAVE!**

Buy 12 "EVER-LAST" Belts... Get 12 Belts FREE!

Need ROLLS, WIDE BELTS, DISCS, SLEEVES, STROKE BELTS, etc. Write for catalog.

Belts available in 36, 50, 60, 80, 100, 120, 150, 180, 220, 320 grit sizes. Please specify grit sizes when ordering, otherwise an assortment will be supplied.

- ☐ 1" x 30"...$16.50/Doz.+ 12 FREE
- ☐ 1" x 42"...$16.95/Doz.+ 12 FREE
- ☐ 2" x 48"...$25.25/Doz.+ 12 FREE
- ☐ 2½" x 16" $17.95/Doz.+ 12 FREE
- ☐ 3" x 18"...$18.25/Doz.+ 12 FREE
- ☐ 3" x 21"...$19.25/Doz.+ 12 FREE
- ☐ 3" x 24"...$19.75/Doz.+ 12 FREE
- ☐ 4" x 21"...$23.50/Doz.+ 12 FREE
- ☐ 4" x 21¾" $23.75/Doz.+ 12 FREE
- ☐ 4" x 24"...$24.00/Doz.+ 12 FREE
- ☐ 4" x 36"...$28.75/Doz.+ 12 FREE
- ☐ 6" x 48" $37.50/½ Doz.+ 6 FREE

Other size belts on request.

☐ Belt Cleaning Stick .....$4.95 each

For Fast Delivery Call Toll Free
1-800-428-2222 (U.S.A.)
1-800-222-2292 (PA only)

9" x 11" PAPER SHEETS
A/O or Garnet Cabinet Paper

	50 PACK	100 PACK
40-D	☐ $17.00	☐ $32.00
50-D	☐ $16.00	☐ $29.00
60-D	☐ $15.00	☐ $27.00
80-D	☐ $14.00	☐ $25.00
100-C	☐ $13.00	☐ $23.00
120-C	☐ $13.00	☐ $23.00
150-C	☐ $13.00	☐ $23.00
No Load Finishing Paper (White)		
120-C	☐ $14.00	☐ $24.00
150-C	☐ $14.00	☐ $24.00
180-A	☐ $11.00	☐ $19.00
220-A	☐ $11.00	☐ $19.00
280-A	☐ $11.00	☐ $19.00
320-A	☐ $11.00	☐ $19.00
400-A	☐ $11.00	☐ $19.00

SHIPPING CHARGES: $4.75 Continental U.S.

☐ MONEY ORDER ☐ CHECK
☐ MASTER CARD ☐ VISA

INDUSTRIAL ABRASIVES CO.
643 N. 8th ST. • READING, PA 19612

Now, Add Instant *Earning Power* To Your Shop!

NOW! Plane, Mold, Sand and Saw with *Infinitely Variable Power-Feed!*

Put this versatile power-feed tool to work in your own shop. See how fast it pays for itself! Quickly converts low-cost rough lumber into valuable finished stock, quarter-round, casing, base mold, tongue & groove...all popular patterns...even custom designs!

NEW! Variable Feed Rate — Now, just a twist of the dial adjusts your planer from 70 to over 1000 cuts-per-inch! Produces a glass-smooth finish on tricky grain patterns no other planer can handle.

FREE FACTS

Phone TOLL FREE 1-800-821-6651 Ext. PW48

WOODMASTER TOOLS, INC., DEPT. PW48
2908 OAK, KANSAS CITY, MO 64108

☐ **YES!** Rush my **FREE INFORMATION KIT** and details on your 30-Day Free Trial Guarantee.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE ( ) _____

TALKING BACK

Print this article

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, Better Homes and Gardens® *WOOD*® magazine, P.O. Box 11454, Des Moines, IA 50336-1454.

Williamsburg tool exhibit delayed

Thanks for including information about Colonial Williamsburg's upcoming tool exhibit in your January 1991 issue. A correction does need to be made concerning the exhibition's date, however. We currently expect it to open sometime in 1993, rather than "early next year" as stated in the article. I'd hate to have your readers, many of whom have called about exhibit dates, be disappointed by arriving too early.

—Jay Gaynor, curator of mechanical arts, The Colonial Williamsburg Foundation, Williamsburg, Va.

Alternative source found for clock/calendar modules

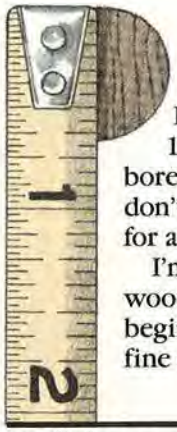
In the August 1991 issue, we showed you how to build an oak base for an electronic clock/calendar module. Although we double-checked before publication, Classic Gifts International, the company that agreed to sell the modules to our readers, has since gone out of business. We have located another source that has agreed to supply the electronic modules to you at the original price. You can order one for $19.95 ppd. from New Products, 15 West Street, Spring Valley, NY 10977. Identify it as the clock/calendar for the WOOD magazine project. Sorry, no telephone orders.

Standard nickel clipboard clips available

HELP! I recently started to make my wife an exotic wood clipboard. Seemed easy enough until I got to the clip. I'd like to use a nice one, perhaps gold-plated, but I can't even find a source for common clips. I could buy a clipboard and swipe the clip, but already she's making noises about how her friends will want one, and it looks like I'd better plan on 10 or so. Any ideas?

—Bob Montgomery, Fort Orange, Fla.

Bob, Meisel Hardware Specialties, in the 1990-91 catalog, offers brass clips in 43/8" and 23/4" sizes, nickel clips in 6" and 3" sizes, and a 3" nickel folding-arm clip. Each costs less than $1. Meisel's has a $15 minimum order and a $4.95 delivery charge. For a catalog or to order, call 800/441-9870.



Dowell on shrinking dowels

I'd like to throw out another suggestion for coping with "The Incredible Shrinking Dowel" (June 1991). I buy the dowel first, and then bore my stock accordingly. That way I don't have to drive around town looking for a dowel to fit the hole.

I'm a furnituremaker by profession and woodworking is my hobby. Everyone, beginner to pro, can benefit from your fine magazine.

—Ed Dowell, Tacoma, Wash.

Radial-arm saw books located

Could you tell me where I may get *Fine Tuning Your Radial-Arm Saw*, by Jon Eakes? I have looked in bookstores. They don't have it and tell me it can't be ordered.

—Albert Barnes, Cramerton, N.C.

Albert, we have gotten a couple of dozen letters and telephone calls from readers unable to find Fine Tuning Your Radial-Arm Saw. *Another reader recommended the book in this column in the August 1991 issue.*

While the book is out of print, the publisher, Sterling Publishing Co., Inc., helped us track down 3,000 copies in Ottawa. The book, catalog no. 49L0701, is $30 ppd. in the U.S. and $25.50 ppd. in Canada. Check and credit card orders will be filled at Lee Valley Tools, P.O. Box 6295, Station J, Ottawa, ON K2A1T4. Or order by calling 613/596-0350. In Western Canada, call 800/267-8757. In Eastern Canada, call 800/267-8767. Sorry, COD orders will not be filled.

Forester speaks out

As a professional forester, and amateur woodworker, I must reply to Mr. Robert Gilly's concern about the depletion of forests (August 1991). I have practiced 40 years as a private industry forester in Iowa, the Pacific Northwest, the Southeast, and Kenya.

Harvested forests are not lost; they are utilized for the benefit of society. Forests are lost when the land is converted to other uses, such as agriculture, shopping malls, homesites, and highways. The real loss of natural resources, including forests, is caused by the human animal, whose reproductive habits outstrip his environment.

The U.S. has three-quarters of its original forest acreage and latest Forest Service surveys indicate that this country grows more wood than is currently being harvested. These forests provide hunting, fishing, recreation, and homes for wildlife. They also promote soil and water conservation.

—Gordon White, Huntsville, Ala.

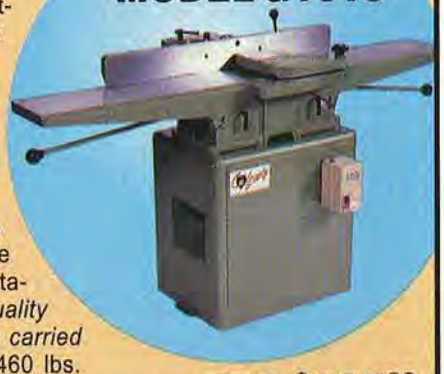
Continued on page 10

Grizzly IMPORTS, INC.
"IMPORTERS OF FINE MACHINERY"

BELOW 1988 PRICE!

You cannot find a better quality machine than this for even twice our price! You will **never** see a price this low again! Features include: • 3 knife cutter head • Magnetic switch • 1-1/2 H.P. motor • Solid steel stand with dust chute • Solid cast iron construction. Many more features too many to mention! See page 21 in our current catalog. *Same high quality machine that we've carried for years!* Weighs 460 lbs.

8" JOINTER MODEL G1018



PRICES ARE F.O.B. WILLIAMSPORT, PA OR BELLINGHAM, WA

REG. $695.00

91-111 SALE PRICE $650.00

TO ORDER:

WEST OF THE MISSISSIPPI 1-800-541-5537

EAST OF THE MISSISSIPPI 1-800-523-4777

WOOD PARTS FROM MIDWEST DOWEL WORKS

Compare Our Low Prices!

		Qty.	Cost
3-1/2" Poplar Shaker Peg	$15/100		
1-3/4" Mini Shaker Peg	$7/100		
3-1/2" Country Wall/ Mug Peg	$15/100		
2-1/2" Country Shorty Peg	$12/100		
Large Bean Pot Candle Cup	$17/100		
Brass Inserts	$9/100		
1/2" Mini Candle Cup	$10/100		
1-1/2" Toy Wheel	$10/100		
2" Toy Wheel	$17/100		
Axel Pegs	$4/100		

SMOOTH SANDED HEARTS

3/4"x1/8" Hearts	$2.75/100		
3/4"x1/2" Hearts	$4.50/100		
1"x3/16" Hearts	$4.00/c		
1"x3/8" Hearts	$6.50/c		
1-3/8"x1/8" Hearts	$5.50/c		
1-3/8"x1/4" Hearts	$7.50/c		
1-3/8"x1/2" Hearts	$10/100		
2"x1/2" Hearts	$18/100		

Great Buys!

		Qty.	Cost
3/8"x36" Standard Dowels	$21/100		
3/4"x36" Oak Dowels	$15/10		
3/8" Maple Buttons	$2.15/100		
1/2" Maple Buttons	$2.25/100		
1-1/2" Maple Spindles	$9/100		
2-1/8" Maple Spindles	$18/100		

ORDER NOW

☐ MC/Visa ☐ Check Enclosed

Total Cost _____

Handling $3.00

Ohio residents add 5½% sales tax _____

Final Cost _____

MC/Visa Number _____

Expires _____ Phone _____

Name _____

Address _____

City/State/Zip _____

FREE 16-PAGE CATALOGUE

Circle this section for FREE Dowels – mixed pack, Maple, Oak, Walnut Cherry, from 1/4" up to 1" Approximately 10 LFT. 14" long. $5.00 value with any order.

MIDWEST DOWEL WORKS
4631 Hutchinson Road
Cincinnati, Ohio 45248
(513) 574-8488
Same Day Service/Order before Noon
Factory Direct/Satisfaction Guaranteed

STEVE WALL LUMBER CO.

Quality Hardwoods and Woodworking Machinery For The Craftsmen and Educational Institutions

Ash	4/4	Select	1.90	UPS Special	$ 59.00
Basswood	4/4	Select	1.30		$ 47.00
Birch	4/4	Select	1.60		$ 53.00
Butternut	4/4	Log Run	1.40		$ 55.00
Cherry	4/4	Select	2.25		$ 66.00
Cypress	4/4	Select	1.60		$ 49.00
Hickory	4/4	Select	1.50		$ 47.00
Mahogany (Genuine)	4/4	Select	2.70		$ 73.00
Maple (Hard)	4/4	Select	1.55		$ 52.00
Maple (Soft)	4/4	Select	1.30		$ 46.00
Pecan	4/4	Select	1.50		$ 47.00
Poplar	4/4	Select	1.20		$ 45.00
White OR Red Oak	4/4	Select	1.80		$ 57.00
Walnut	4/4	Select	2.50		$ 71.00
Cedar (Aromatic Red)	4/4	1C+Btr.	1.35		$ 46.00
White Pine	4/4	F.G.	.85		$ 37.00
Yellow Pine	4/4	Clear	1.20		$ 45.00

Above prices are for 100' quantities of kilndried rough lumber sold by the Bd. Ft. FOB Mayodan, NC. Call for quantity discounts. Other sizes and grades available.

Above prices are 20 bd. ft. bundles of clear kilndried lumber 3"-10" wide • 3'-7' long (Random widths & lengths) Surfaced 2 sides or rough. Delivered UPS prepaid in the Continental U.S.

LUMBER SPECIALS

CHERRY 100 Bd. Ft. Bundle Log Run S2S 13/16 **$ 90***

WALNUT 100 Bd. Ft. Bundle #1 Common 4/4 **$ 110***

*FOB Mayodan - Motor Freight Only

Call For Best Prices On *MiniMax*

STEVE H. WALL LUMBER CO.
BOX 287 • MAYODAN, N.C. 27027
919-427-0637 • 1-800-633-4062 • FAX 919-427-7588

Send $1.00 For Lumber and Machinery Catalog

WOODCRAFT

The Leading Edge in Woodworking Tools

FREE Tool Catalog

Our complete woodworking tool catalog features over 4,000 of the finest quality woodworking tools, books, and supplies available today. See the difference yourself FREE!

Order yours today!
Call 1-800-542-9115

Or write: Woodcraft, Dept. 91WI109
210 Wood County Industrial Park
P. O. Box 1686
Parkersburg, WV 26101-1686

TALKING BACK

Continued from page 9

Who's reforesting clearcuts?

Thanks for the Rain Forest Update featured in the June 1991 issue. It sounds like the Woodworkers Alliance for Rainforest Protection is on a good track. But shouldn't conservationists be just as concerned with the fate of lands already logged as they are with protecting the remaining forests? Millions of already-denuded acres need to be reforested, hopefully with a variety of native species and *not* in the wildlife-desert monocultures favored by those interested only in maximizing gross timber output. We have plenty to do here at home in our own "rain forests" too. There are more than a million acres needing planting in Washington state alone. Let's make smoke about this until the government responds.

—Jim Wallin, Forest Grove, Ore.

Indian carvings get mixed review

I was pleasantly surprised to learn in the April 1991 issue of *WOOD®* magazine of Peter Wolf Toth and his tribute to our native Americans through his "Whispering Giants" sculptures. [Toth has sculpted 60 Indians across the country.] A man of such vision and singular conviction is worthy of all the acclaim he may receive.

I was disappointed, however, by the following article, which included instructions on how I, a white, middle-class male, can carve my very own "Indian" in an image "so recognizable and sought after" as a cigar store token! You have exhibited very poor taste and judgment. This "Cigar-Store Indian" may be an image worth 1,000 words, but for me they begin with "shameful, degrading, tasteless, pitiable. . ."

—John Saunders, Sarasota, Fla.

Belt-cleaning shop tip could lead to silicone contamination

In response to a reader tip in the August 1991 issue of *WOOD*, I strongly disagree with using cured silicone caulk to clean abrasive belts, drums, and disks. Being a maker of custom furniture, one of the biggest problems I run into is silicone contamination caused by lubricants and hand creams. Nothing's more frustrating than working weeks on a piece only to find white spots (fish-eye) when the finish is applied. I'm not sure what the commercial belt cleaners are made of, but I would suggest trying cured latex caulk with no silicone added.

—R. Billing, Chicago, Ill.

Continued on page 12

Tips from Freud

Tip 1. LU85M - How to get silky smooth cross grain cuts without sanding.
From the cutting angles, to the Teflon coating, everything in this blade was designed to obtain the ultimate finish. Not only is sanding not required, but in most cases it will even ruin the cut. Ideal for accurate cutting of precious woods, precision miters, or picture framing where sanding could result in rounded edges and gaps in the joint. Will fit in miter saws, chop saws, radial arm saws and table saws.

Tip 2. LU84M - How to save yourself hours in shop time.
In many woodworking shops one saw may be needed to rip a piece of 4/4 oak one minute or a sheet of thin plywood the next. The Freud LU84 combination design gives you the flexibility of working with different materials without worrying about changing blades. This is because the teeth are grouped in sets of 5 and are separated by a deep gullet. This combines the high number of teeth required for crosscutting with the chip ejection ability of a rip saw. To maximize the safety of this blade, the deep gullet has an Anti-kickback design. Excellent on radial arm saws because the climbing effect is eliminated.

Tip 3. LU87M/LU88M - How to increase the performance of your table saw or radial arm saw.
By using Freud's thin kerf blades, LU88M for crosscutting and LU87M for ripping, your saw will be removing less wood than the standard carbide blade, requiring less horsepower to produce equally good results. Thin kerf blades reduce the radial arm saws aggressive self-feeding characteristics. In the past, thin kerf blades have been inferior, but Freud engineered a blade that has a kerf that is 28% thinner than a standard blade and is laser cut and pretensioned to eliminate these problems. The blade has a Teflon coating to prevent heat build-up due to friction. All this provides a blade that is easier to feed and requires less power with equal precision.

Tip 4. LU91M - How to get the most from your compound miter saw.
The LU91M produces a superior finish cut on sliding and non-sliding compound miter saws. The 5° negative hook prevents the blade from being to aggressive and will push the work piece down and towards the fence. This negative hook angle meets the original equipment manufacturers recommendations for all of the sliding compound miter saw. This blade uses Freud's Thin Kerf Technology to reduce the power required and the material removed. This also helps to reduce the climbing effect associated with saws of this type and radial arm saws. Combine this with Freud's advanced carbide, laser cut body, and CAD technology and you have a blade that will out perform all others. Use on the Hitachi C8FB, DeWalt 1707 Crosscutter, and Makita LS1011.

Tip 5. LU92M - How to cut Corian® counter tops with confidence.
About the only way you can ruin a Corian® or laminated counter top with Freud's LU92M is to measure wrong. It was engineered specifically to cut the broad array of counter top materials available today. The LU92M will zip through Corian®, melamine, and laminates with little effort and leaves a smooth, chipless cut. These blades are equipped with Freud's exclusive H00K carbide teeth tested by a leading university against other leading carbide blades. The results from the H00K carbide left all others in the dust. Each tooth has a special Modified Triple Chip Grind that was designed by computer simulation to breeze through solid surface materials or single and double face laminates with a virtual chip free edge.

Compare These Freud Advantages:
- 100% Laser Cut
- Impact resistant Tri-metal Brazing
- Special Micrograin Tungsten Carbide with Titanium
- Computer Designed Expansion Slots
- Exclusive Anti-kickback Shoulder Design
- Special Factory Tensioning

freud®
Precisely what you need.
High Point, NC 27264 • 800-472-7307

AmMax TOOL CO.

Precision tools for skillful woodworkers

FREE * Complete catalog sent upon order. * Plastic caliper ($4.00 value) for any order.

TUNGSTEN CARBIDE TIPPED TOOLS

CALL TOLL FREE

1-800-782-6629 (NATIONWIDE)

(619)535-8940 (CALIFORNIA)

CUTTER	TOOL #	CUT DIA.	CUT L.	SNK D.	PRICE
Straight	ST206	1/4	3/4	1/4	5.50
	ST208	5/16	3/4	1/4	5.50
	ST210	3/8	1	1/4	5.50
	ST213	1/2	1	1/4	5.50
	ST216	5/8	1	1/4	6.25
	ST219	3/4	3/4	1/4	8.95
	ST406	1/4	3/4	1/2	5.50
	ST408	5/16	1	1/2	5.50
	ST410	3/8	1	1/2	5.50
	ST413	1/2	1	1/2	5.50
	ST413L	1/2	1-3/16	1/2	6.95
	ST413E	1/2	2"	1/2	13.95
	ST416	5/8	1-3/16	1/2	7.50
	ST419	3/4	1-3/16	1/2	8.95
	ST422	7/8	1-3/16	1/2	10.50
	ST425	1	1-3/16	1/2	10.95
Flush Trim	FT210P	3/8	1/2	1/4	6.00
	FT210	3/8	1	1/4	6.50
	FT213	1/2	1	1/4	6.95
	FT213L	1/2	1-1/2	1/4	10.50
	FT410	3/8	1-3/16	1/2	6.50
	FT413	1/2	1-3/16	1/2	6.95
	FT413L	1/2	1-1/2	1/2	10.50
Dovetail	DV210	3/8	3/8	1/4	4.95
	DV213	1/2	1/2	1/4	4.95
	DV410	3/8	3/8	1/2	4.95
	DV413	1/2	1/2	1/2	4.95
	DV416	5/8	3/4	1/2	6.50
	DV419	3/4	1	1/2	6.95
	DV425	1	7/8	1/2	8.95
Core Box	CB206	1/4	1/4	1/4	8.00
	CB210	3/8	1/4	1/4	9.00
	CB213	1/2	5/16	1/4	11.00
	CB216	5/8	3/8	1/4	12.50
	CB219	3/4	1/2	1/4	14.00
	CB413	1/2	5/16	1/2	11.00
	CB416	5/8	3/8	1/2	12.50
	CB419	3/4	1/2	1/2	14.00
	CB422	7/8	5/8	1/2	16.95
	CB425	1	5/8	1/2	17.95
	CB432	1-1/4	3/4	1/2	25.95
	CB438	1-1/2	7/8	1/2	28.95
45° Chamfer	CH210	1	3/8	1/4	12.00
	CH213	1-3/16	1/2	1/4	12.00
	CH216	1-3/8	5/8	1/4	13.50
	CH416	1-3/8	5/8	1/2	14.00
	CH419	1-5/8	3/4	1/2	16.00
	CH422	1-7/8	7/8	1/2	19.00
	CH425	2-1/8	1	1/2	24.00
Rabbet 2 FLUTES	RB232	1-1/4	1/2	1/4	12.00
	RB432	1-1/4	1/2	1/2	12.00
	SL203-2	1-1/4	1/8	1/4	10.00
	SL205-2	1-1/4	3/16	1/4	11.00
	SL206-2	1-1/4	1/4	1/4	11.00
	SL210-2	1-1/4	3/8	1/4	12.00

	TOOL #	RADIU	CUT L.	SNK D.	PRICE
Rounding Over	CR201	1/16	3/8	1/4	10.00
	CR203	1/8	3/8	1/4	10.00
	CR205	3/16	7/16	1/4	10.00
	CR206	1/4	2/1	1/4	11.00
	CR208	5/16	9/16	1/4	12.95
	CR210	3/8	5/8	1/4	14.00
	CR213	1/2	3/4	1/4	16.00
	CR406	1/4	1/2	1/2	11.95
	CR410	3/8	5/8	1/2	14.00
	CR413	1/2	3/4	1/2	16.00
	CR416	5/8	7/8	1/2	19.00
	CR419	3/4	1	1/2	20.00
	CR425	1/2	1-1/4	1/2	32.50
	CR432	1-1/4	1-3/4	1/2	42.95
Roman Ogee	RO204	5/32	1/2	1/4	15.00
	RO206	1/4	3/4	1/4	16.00
	RO404	5/32	1/2	1/2	15.00
	RO406	1/4	3/4	1/2	16.00
Cove	CV203	1/8	3/8	1/4	11.00
	CV205	3/16	7/16	1/4	11.00
	CV206	1/4	1/2	1/4	11.00
	CV208	5/16	1/2	1/4	12.00
	CV210	3/8	1/2	1/4	12.00
	CV213	1/2	5/8	1/4	13.00
	CV406	1/4	1/2	1/2	12.00
	CV410	3/8	1/2	1/2	12.50
	CV413	1/2	1/2	1/2	13.50
	CV419	3/4	7/8	1/2	27.00
Classical	CS203	1/8	5/8	1/4	18.00
	CS206	1/4	7/8	1/4	19.00
	CS403	1/8	5/8	1/2	18.00
	CS406	1/4	7/8	1/2	19.00
HALF ROUND	HR203	1/4 D	5/8	1/4	12.50
	HR205	3/8 D	11/16	1/4	13.50
	HR206	1/2 D	3/4	1/4	14.50
	HR208	5/8 D	1	1/4	16.00
	HR210	3/4 D	1-1/8	1/4	16.00
	HR410	3/4 D	1-1/8	1/2	17.00
	HR413	1 D	1-3/8	1/2	18.00
	HR416	1-1/4 D	1-5/8	1/2	35.00
	HR419	1-1/2 D	1-7/8	1/2	40.00

CARBIDE TIPPED HORIZONTAL PANEL RAISING $49 EACH

* Industrial Quality Grade C3 Tungsten Carbide Tipped
* 3 mm Thickness Carbide Offer Longer Life.

3/4" BORE	C931	C984	C985	C986	C987
1-1/4" BORE		C1084	C1085	C1086	C1087

REDUCING BUSHING: $2 / PAIR

Top of the line Made In U.S.A.

Nicholson

10" 60T **$39.99**

10" 36T **$18.10**

10" 40T **$26.89**

Retail values up to $60

Carbide Tipped

NEW PRODUCTS

2-piece Stile & Rail -- $69 a set

CR01 OG02 BE03 PL04

OGEE FILLET PANEL RAISING

1/2" SHANK ONLY

OF466 2-5/8" $24.00

OF476 3-1/4" $39.00

STILE & RAIL

Reversable

RS248

1/4" shank **$37**

RS448

1/2" shank **$37**

3 WINGS, 9 CUTTING EDGES

FINGER JOINTER

FJ463

1/2" shank **$53**

LOCK MITRE

ML470 **$34**

1/2" shank

FOR 5/8" TO 1-1/8" STOCK

KEY HOLE

KH210

1/4" shank

$6.50

TONGUE & GROOVE

1/4" SHANK **$28**

FOR 5/8" TO 3/4" STOCK

1/2" SHANK **$29**

FOR 5/8" TO 1" STOCK

3 WINGS SHAPER CUTTERS

3/4" BORE

$140

C940

CONCAVE STILE & RAIL SET

$140

C994

OGEE STILE & RAIL SET

$140

C945

CONVEX STILE & RAIL SET

REVERSIBLE STILE & RAIL — C965 $45

LOCK MITRE — C998 $42

FINGER JOINT — C961 $69

GLUE JOINT — C911 $32

NET 30 DAYS TO GOVERNMENT AGENCIES, SCHOOLS.

SAME DAY SHIPPING *Count on us!*

Shipping is FREE for orders over $60 and is only $2 for smaller orders.

HOURS: *MON thru FRI 7 AM to 6 PM*

NEW: SAT 8 AM — 2 PM

SEND YOUR CHECK TO:

AMMAX TOOLS CO.

P.O. BOX 520

POWAY, CA 92074

TALKING BACK

Continued from page 10

A remote dust-collector switch for woodworkers on the go

Your remote dust-collector switch is somewhat cumbersome compared to the electronic device I am using. It consists of wireless burglar alarm components commonly available through electronics catalogs, stores, and departments. Each of the two units is about the size of a pack of cigarettes. The dust collector plugs into one unit, which in turn is plugged into a standard A/C electrical outlet. Now all you need is the handheld remote on/off switch. You won't need any wiring.

I fasten my remote to my left arm with a thick rubber band, but you can wear it on your belt or keep it in your pocket. The device is sold by Radio Shack as product No. 61-2667, and carries a price of $21.95. It is also sold by Heath Co., Benton Harbor, Michigan, and in some local home centers.

The only disadvantage is that this model's electrical capacity is limited to 110 volts and 15 amps. Larger, heavy-duty units cost more and work on the same principle. I have already saved the price of the system in shoe leather alone.

—Karl Schultz, Berwyn, Ill.

Reader cleans up dust with a 3-vac attack

I thoroughly enjoyed the central dust-collector article. Kudos to Bill Krier and his colleagues for the interesting information, pictures and illustrations. You stimulated my thinking.

After sketching several plans and checking prices, I explored another alternative. I already had one large shop vacuum. By adding two more (which were on sale), I can now collect dust from my tablesaw, radial-arm saw, belt/disc sander, and bandsaw very effectively.

—Ed Heuer, Port Edwards, Wis.

Scoring test tubes by the score

If you need test tubes for bud vases or other uses, a Des Moines outfit can supply them in boxes of 20 for $9.95 ppd. The following test tubes are available.

Catalog number	*Metric size*	*Approx. size in inches*
SR10B	*10 × 75mm*	*3/8 × 3"*
SR12B	*12 × 75mm*	*7/16 × 3"*
SR13B	*13 × 100mm*	*1/2 × 4"*
SR16B	*16 × 100mm*	*5/8 × 4"*
SR165B	*16 × 125mm*	*5/8 × 5"*
SR166B	*16 × 150mm*	*5/8 × 5 7/8"*

Send check or money order to SHARAY, P.O. Box 3093, Des Moines, IA 50316.

Readers respond with scrollsaw-pattern sources

In the April 1991 issue, we asked for help locating new scrollsaw pattern sources for reader Boyd Pearson. Your suggestions ranged from tracing old catalog pictures to the using of stained-glass window pattern books.

One of you offered to draw him patterns. Several others recommended paper-cutting books from Back Street Designs and Dover Publications. Here are some excerpts from letters:

Scherenschnitte (paper cutting) pattern books, available in crafts stores, are an excellent source. Many of these books are published by Back Street Designs, Inc. P.O. Box 1213, Athens, AL 35611.

Other good sources include *272 Artistic Silhouettes* by Floyd Morris, published by the Goodheart-Willcox Co., Inc., South Holland, Illinois, and *Easy-to-Cut Silhouette Designs* by Betty Christy, published by Dover Publications, Inc., 31 E. 2nd St., Mineola, NY 11501.

George S. Bulau, Spring Hill, Fla.

Shine a light on an object and trace its shadow.

—Mark Comley, Lexington, Ky.

Boyd will find more patterns than he can shake a stick at in fabric-store sewing pattern books.

—Phil Pearsall, Philadelphia, Pa.

Other readers suggested the following:

- *Papercuttings* by Alison, 404 Partridge Circle, Sarasota, FL 34236 ($1.50 for a catalog).
- *Paper Crafts 1989,* Better Homes and Gardens®.
- *Christmas Ideas 1990,* available from Better Homes and Gardens.
- *The Encyclopedia of 312 Woodworking and Scrollsaw Designs,* $12.99 ppd., FC&A, Dept. ZMK-2, 103 Clover Green, Peachtree, GA 30269.
- Leather carving designs from Tandy Leather.
- Klockit patterns, call 800-556-2548 for catalog.
- *Complete Book of Stencilcraft,* by Joanne C. Day. Patterns for stained glass, leather work, and etching; magazines and newspapers; line drawings, stencils, and silhouettes; weather vane patterns in ironworks books; and, coloring, tole painting, and calligraphy books.

Continued on page 14

Quality Woodworking Machines at Affordable prices from

Penn State Industries

Dept. W, 2850 Comly Road • Phila, Pa. 19154

Order Toll Free 1-800-288-7297 • Info: 215-676-7609

Visa, Master, & Discover Cards accepted • Pa residents add 6% Sales Tax

When ordering - Add UPS Shipping Charges as noted

Call or Write for our New 24 Page Color Catalog

5 Speed Drill Presses

- Motor: 1/2 HP TEFC
- 13-3/4" Swing
- 5/8" JT3 Chuck
- 11" x 11" Sq Table
- Work Light included
- Table tilt 90°
- Table swivel 360°
- Rack table elevator

Table Top Model:
#DPT ... **$179.95** (UPS $25)
Floor Model:
#DPF ... **$219.95** (UPS $30)

Two Way Sanders

Features of both models:
- Dust collector on belt
- Tables tilt to 45°
- Sealed ball bearings
- Easy belt tracking

6x9 Sander:
- Includes stand
- 9" Disc • 6"x48" Belt
- 3/4 HP, 1720 RPM
- **Free** Belts & Discs worth **$21.00**

#S69 ... **$219.95** (UPS $30)

4x8 Sander: ON SALE
- 8" Disc • 4"x36" Belt
- 1/3 HP, 1720 RPM
- **Free** Belts & Discs worth **$14.00**

#S48 ... **$109.95** (UPS $8)

Super 125 Planer
***only* $359.95**

This machine will pay for itself time and again by planing your own wood. Finishes wood like machines many times its price.
- Portable at 65 lbs
- 26.2 fpm power feed
- HSS Knives 12-1/2" wide
- Motor: 16Amp, 8000RPM 2HP, 115V
- 1/8"Max depth of cut

#PLA .... **$359.95** (UPS $15)
Extra Knives ..$25/pair
Dust Chute ... $15/ea (UPS $3)
Stand ..... $39/ea. (UPS $6)

Variable Speed Scroll Saw
ON SALE $169.95

Cuts intricate patterns in many different materials. Electronically controlled motor gives full power at all speeds 400-1800cpm.

FREE ACCESSORIES:
Dust blower • 1 dz blades • EZ Set permanent top arm blade holders • EZ jig to attach standard holders • 4 blade holders • Neptune 1-1/2" lettering guides w/6 patterns

Specifications:
- Motor: 1.3 Amp, 110V
- Throat: 15" deep • Stroke-3/4"
- Tilt 0-45° left • Cut Depth: 2"
- Blades: uses pin & plain end

#SVS ..... **$169.95** (UPS $10)

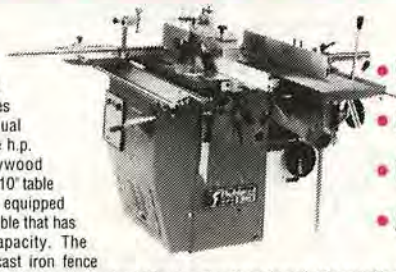
Dust Collectors

610 CFM Dust Collector:
This collector is perfect for hookups to almost any single machine.
• 1HP, 110/220V • 1 outlet @ 4" • 2 Bags @ 20 gal •Wt: 75lbs • 610 CFM
Free: 8' of hose, 1ea 4" to 3" & 4" to 2" adaptors.. **$15 Value**
#DC1 ..... **$199.95** (UPS $20)

900 CFM Dust Collector:
This 1-1/2HP model allows for use in 2 or more machines & gives improved service for long runs of hose.
• 1-1/2HP, 110/220V • 2 outlet s@ 4" • 2 Bags @ 30 gal •Wt: 120lbs • 900CFM
Free: 50' of hose, 1ea 4" to 3" , 2 ea 4" to 2" adaptors.. **$40Value**
#DC2 ..... **$299.95** (UPS $30)

ROBLAND

The Intelligent One-Man Shop



The Robland X31 features heavy duty cast iron worksurfaces with 3 individual motors of three h.p. each. Full plywood capacity on the 10" table saw, which is equipped with a sliding table that has 50" cutting capacity. The shaper has a cast iron fence system with individually micro adjustable in and outfeed fences, the spindle sizes are 3/4" and 1 1/4". The jointer is 55" long and it features a three knife cutter head. to operate the 12" thickness planer you simply fold the jointer tables out of your way. This process only takes 5 seconds. The thickness planer will accept wood 9" thick. The chuck for the mortiser will self center any bit from 0" to 5/8". the X, Y, Z table is adjustable on all three axes and it will make extremely accurate quality joinery for you in seconds. No function change takes more: than 30 seconds.

- Heavy Duty
- Cast Iron
- Powerful
- Accurate

CALL TODAY FOR INFORMATION ON A FREE 40 MINUTE VIDEO

LAGUNA TOOLS

2081 Laguna Canyon Road
Laguna Beach, California 92651
1-(800) 234-1976

Econ-Abrasives

WE MAKE ABRASIVE BELTS ANY SIZE, ANY GRIT!

ABRASIVE SHEETS:
(9 X 11)

CABINET PAPER

	50/pk	100/pk
40D	$17.00	$32.00C
50D	16.00	29.00C
60D	15.00	27.00C
80D	14.00	25.00C
100 thru 150C	13.00	23.00C

FINISHING PAPER

80A	$ 10.00	$17.00C
100 thru 280A	9.00	15.00C

WET/DRY PAPER

220 thru 600	$14.00	$24.00C

NO LOAD PAPER

180 thru 400A	$11.00	$19.00C

"C" = 100 SHEETS

ABRASIVE BELTS

PLEASE SPECIFY GRITS

1X30	$ .73 ea	3X24	$ .84ea
1X42	.73 ea	3X27	.87ea
1X44	.73 ea	4X21 3/4	.96ea
2 1/2X16	.77 ea	4X24	.99ea
3X18	.78 ea	4X36	1.20ea
3X21	.81 ea	6X48	3.14ea
3X23 3/4	.84 ea	2 1/4X80	2.94ea

OTHER SIZES ON REQUEST

JUMBO CLEANING STICK $8.80
2 x 2 x 12

OTHER ITEMS

*WIDE BELTS	*PSA DISCS
*ROLLS	*ROUTER BITS
*FLAP WHEELS	*WOOD GLUE
*PUMP SLEEVES	*VELCRO DISCS

*MINIMUM ORDER $25.00
*MasterCard, VISA, or Check
*SATISFACTION GUARANTEED!!!
*CALL FOR FREE 1991 CATALOG

- TX & NV Add Sales Taxes
- Continental U. S. Shipping Charges add $5.50

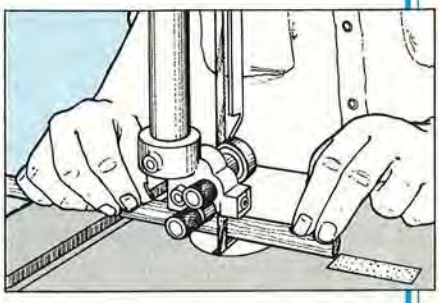
Econ-Abrasives
P. O. Box B865021
Plano, TX 75086
(214)377-9779

NATIONAL (800)367-4101

TALKING BACK

Continued from page 13

Cutting kickback on bandsaw illustrations



In the shop tips section, page 12, August 1991 you show an illustration of hands cutting dowels to short length freehand on the bandsaw. It is unfortunate that this illustration slipped past your safety expert. The professionals will know better. I worry about the novices who read the shop tip and follow the illustration exactly as shown. The safety rule is "Never cut round stock on any power saw without using a V-block and clamping devices."

—Wally Fillingham, Kalamazoo, Mich.

May you sell these projects?

Readers often write to ask if they can build and sell the projects presented in WOOD magazine. You may build and sell any item designed by a member of our staff (see the masthead on page 5 for a list and compare those names to the design credit accompanying each project). But, if we bought the project from an outside designer, it is neither ethical nor legal to manufacture or sell their copyrighted item. You may make those projects as gifts for friends and family, but not for sale.

Dust-collector static

Your article on building a central dust-collection system in the June 1991 issue was especially interesting to me because I recently constructed and installed a similar system in my shop. One difference is that in running my internal ground wires, at the end of each pipe section, I drilled a 1/16" hole, threaded the wires through, and connected them on the outside. Changing the system is easier this way, and trouble spots, where the ground wire can trap chips, are eliminated. The few ungrounded inches shouldn't allow a static charge to build.

—Roger Hearn, Detmar, Del.

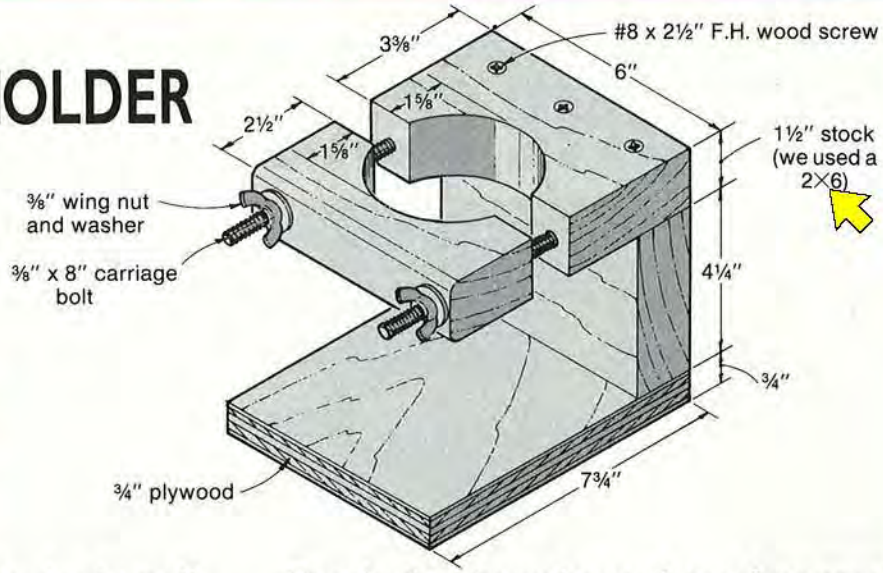
Get your braided ground wire here

Several readers have written to ask where to get the braided ground wire we used in our June 1991 central dust-collection system article. If you're having trouble locating the wire, contact Radio Trade Supply, 1017 High St., Des Moines, IA 50309. Refer to our article when asking for the tinned copper wire, 1/64" thick, available in 100' lengths for $12.50 ppd. To order by telephone, call 515/288-7237.

Print this article

EASY-AS-PIE

PALM-SANDER HOLDER



Trying to hold a palm sander in one hand and a small project in the other can make you feel a bit like a juggler. Our holder clamps firmly to your workbench, allowing you to see your sanding progress while leaving both hands free to control the workpiece. For a proper fit, measure the shape of your sander's motor housing to determine the opening size.

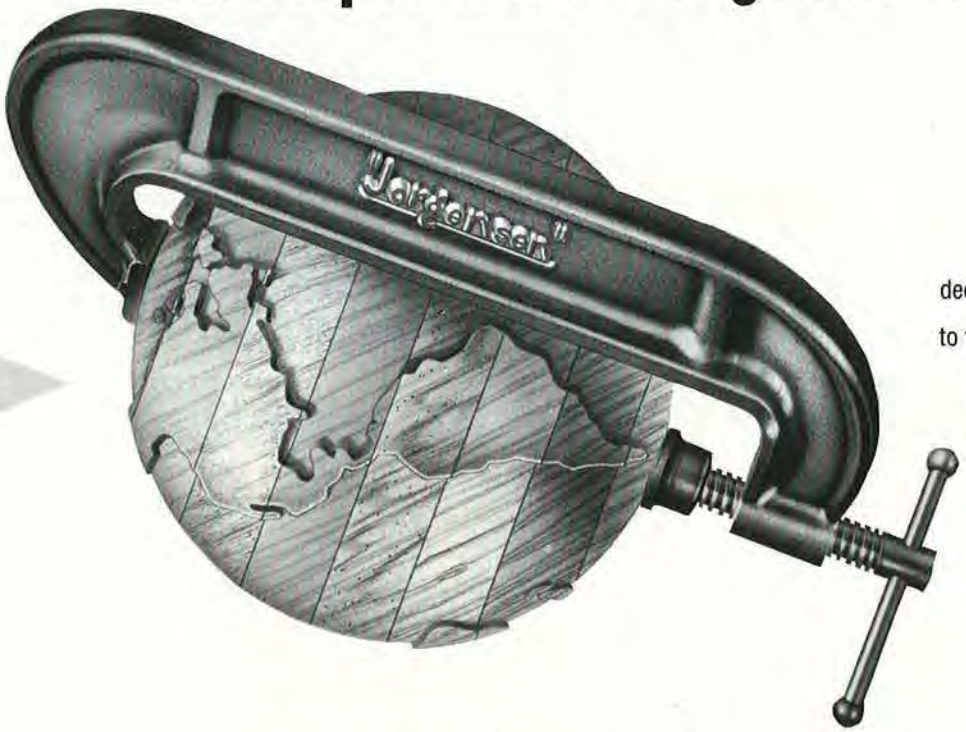
To make changing sandpaper a breeze, leave enough clearance between the palm-sander pad and the top of the holder to allow you to change sandpaper without having to remove the sander.

To fit the Porter Cable 330 shown, we cut a 4" hole in a 6 × 6⅝" block and trimmed the block to the size shown. Hole sizes will vary for other brands of sanders.

Project Design: Russell Smith Illustration: Kim Downing; Jim Stevenson Photograph: John Hetherington

We've helped hold it together... Since 1903

"Jorgensen"®
"Pony"®
"Adjustable"™



Quality in our products... dedication in our service. We've held to these commitments just as you've held up our Clamps and Vises as your standards to each new generation since 1903. We'll continue to hold consistently to our traditions of excellence.

Write for our Catalog SEND $1.00
Adjustable Clamp Company
410 N. Ashland Avenue, Chicago, IL 60622

Print this article

BLACK & DECKER'S CORDLESS CYCLONE SCRUDRILL

AN IMPRESSIVE PERFORMER WITH AN ENGAGING NEW CLUTCH

When we reported on 21 cordless drills in the April 1991 issue of *WOOD*® magazine, Black & Decker's new feature-laden Cyclones were prototypes, not quite ready for testing. B&D claimed the tools would sport an innovative clutch, so we waited eagerly to get our hands on a working model.

Recently, we ran a 9.6-volt model through a user test (B&D also offers a 12-volt Super Cyclone). Here's what happened.

One smooth operator

Before even turning on the Cyclone, the tool impressed us with its good balance and comfortable grip. A nice start. Then, we used it to assemble a 10'-long cabinet requiring more than 150 screws ranging from 1" to 3½" long. Most of the screws required pilot holes, and some needed countersinking. We completed the project on one battery charge.

Like other cordless drills priced at $150 and above, the Cyclone has plenty of nice features. All of its switches worked flawlessly, and the smooth operation of its gear-reduction lever especially impressed us. With a flip of the conveniently located lever you can change between speed ranges (0-350 rpms and 0-1,200 rpms on the 9.6-volt model 1964).

A similar lever for switching between drilling and screwdriving also worked without a hitch. In the screwdriving position, the motor engages the chuck only when you apply forward pressure to the drill. This feature, unique among the drills we've tested, allows you to drive more screws in less time and with greater control.

The tool's Versa-Clutch has 23 screwdriving torque levels to choose from. Clutches prevent you from burying screws too deeply, snapping off their heads, or stripping the threads formed on the walls of a wood hole.

And, the Versa-Clutch goes above and beyond the duties of a typical clutch. Just as a jockey calls on his horse to give him more effort in the home stretch by cracking his whip, you can get more driving force from the drill by simply applying greater forward pressure against the screw. For example, driving a screw into a knot or other hard spot can cause the clutch to disengage before the screw reaches its full depth. With the Cyclone, you only need to bear down harder to prevent the clutch from slipping. With other drills, you have to stop and manually change the clutch to a higher setting before fully driving the screw.

The bottom line

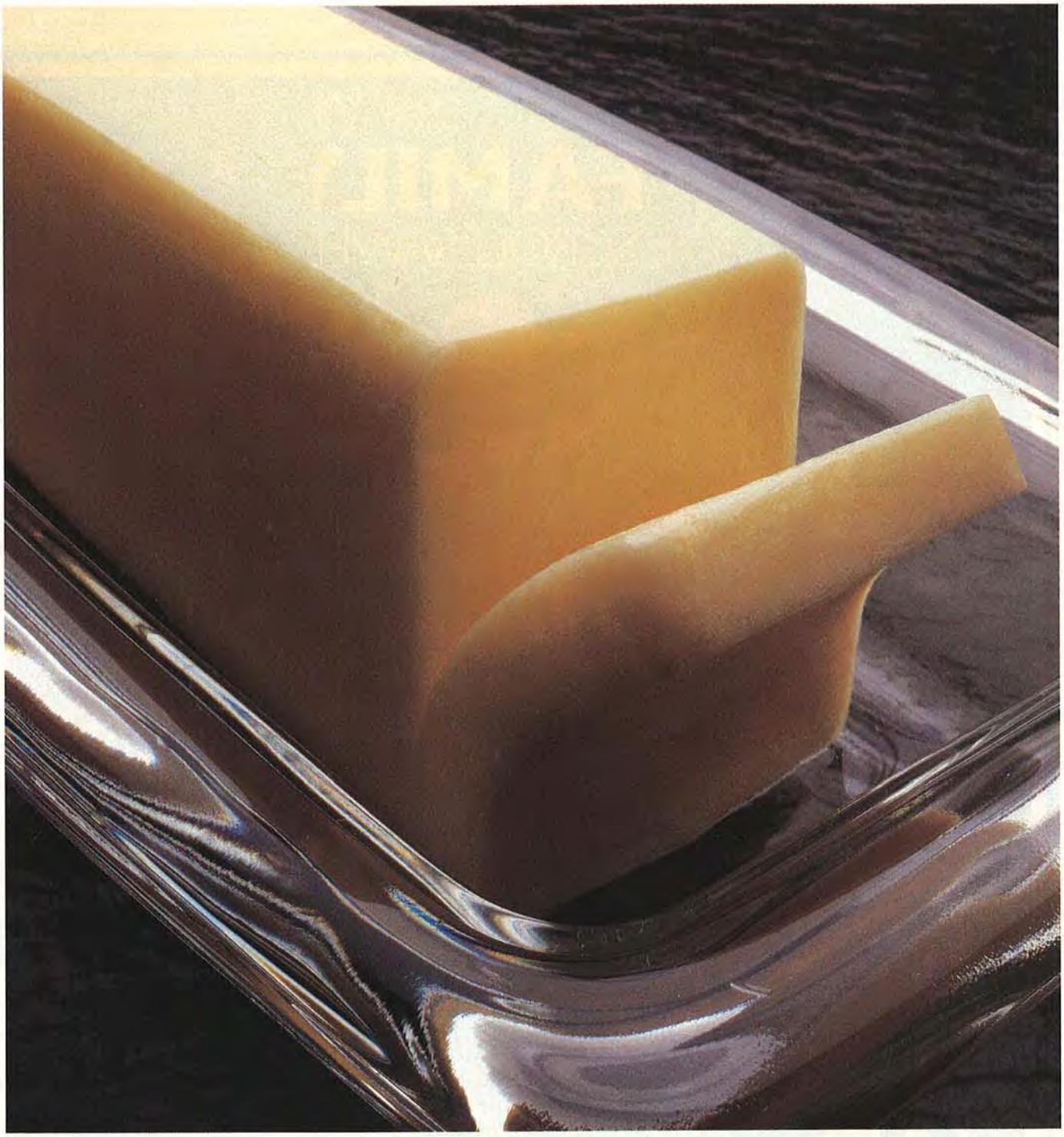
Black & Decker's new Cyclones are among the most expensive cordless drill/drivers on the market ($159 to $179 for the 9.6-volt model and $169 to $199 for the 12-volt machine). But, these tools are worth every penny if you do a lot of screwdriving.

Our only complaints—and they're both minor ones—involve the Cyclones' keyed chuck and one-hour charger. We prefer keyless chucks for their ease of use and superior gripping strength. A keyless chuck may be in the Cyclones' future, says company spokesman Allen Brelsford, but he wouldn't elaborate.

We also think that cordless drills in this price range should have batteries that recharge in a half hour or less. The Cyclones use the same one-hour Univolt charger packed with B&D's other cordless drills.

Note: Company officials tell us B&D will have a 15-minute charger available as an accessory item by the time you read this. The unit will charge batteries up to 13.2 volts from all major power-tool manufacturers. We'll let you know how this product performs as soon as we get our hands on one.

Written by Bill Krier
Tested by Bob McFarlin
Photograph: Hopkins Associates

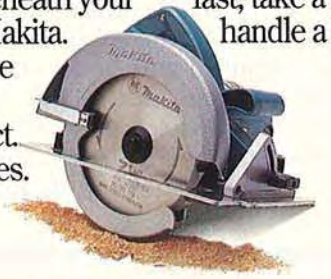


Solid Oak As Seen By A Makita Circular Saw.

Don't grit your teeth. Don't even tense your muscles. You're going to make one of the hardest hardwoods seem to melt beneath your blade. Don't worry. You're using a Makita.

Makita Circular Saws have motors that are extraordinarily powerful but exceptionally compact. They have durable, heavy-duty bases. And precision ball-bearing construction.

So if you want to eat solid oak for breakfast, take a tip from us. Get a saw that can handle a high-fiber diet.



Makita

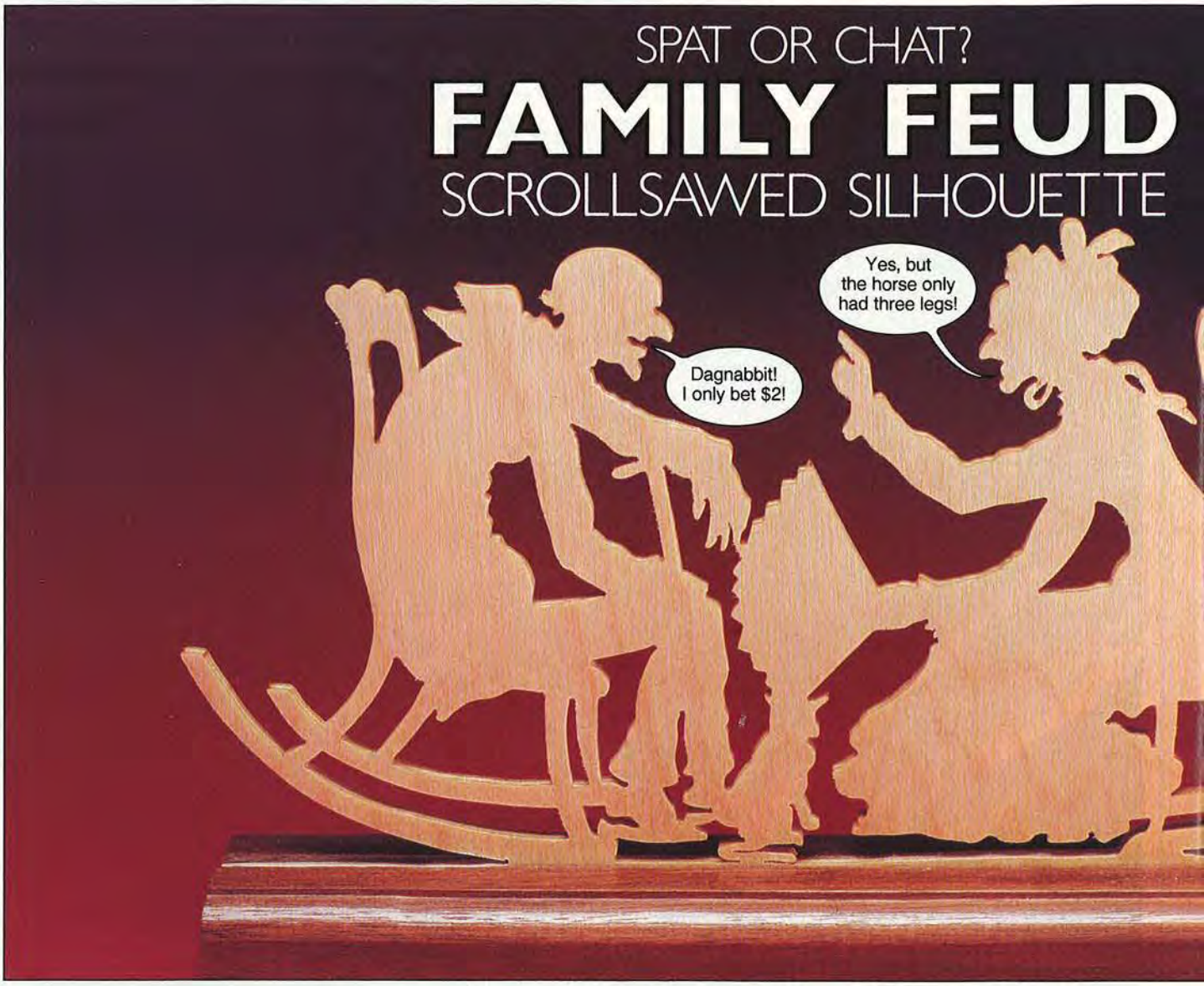
It's All The Power You Need.®

Makita U.S.A., Inc. 14930 Northam, La Mirada, California 90638-5753 (714) 522-8088

SPAT OR CHAT?

FAMILY FEUD

SCROLLSAWED SILHOUETTE



Before radio and television, home entertainment often amounted to an animated conversation between Mom and Pop in the parlor. What could these two be talking about? Pa's night out? The cost of living? The Cubs' chances? Entertain yourself by cutting this humorous pattern from the past on your scrollsaw. Maybe by the time you're finished, you'll have decided what these two are discussing with such relish.

Print this article

Materials: *Cut this authentic old-time pattern from ⅛" Baltic birch plywood. A 5×9" piece will suffice for the stand-up silhouette. You'll also need a ¾×1¼×9" piece of walnut or some other hardwood to make the base.*

Photocopy the full-sized pattern, *opposite page*. Adhere it to your stock with spray adhesive.

Since you'll be cutting thin stock, try stack-cutting up to five pieces at a time. You may have more control and be less likely to cut off some of the fine details with the thicker material.

Just stack your blanks and tape the edges together with masking tape. (Some scrollsawers nail their stacks together with small brads outside the pattern area.) Put the pattern on the top piece in the usual fashion.

Drill 1/16" blade start holes where shown on the pattern. Now, begin sawing with the smallest inside cuts, such as Mom's bonnet string, the area between Pop's feet, or the spaces between the chair rockers.

We found that a #5 blade (.035×.015" with 15 teeth per inch) handled the detailed cutting easily. Complete all inside cuts before sawing the outline.

To make a base for your silhouette, cut a piece of hardwood (we

chose walnut) ¾ × 1¼ × 9″. Saw a ⅛″ blade kerf ¼″ deep along the middle of the topside with a tablesaw. Round the top edges with a ¼″ round-over bit in a table-mounted router.

Mount the cutout in the slot, and give the project a clear finish. Clear lacquer in a spray can will do the trick. Spray at an angle from top, bottom, and both ends on both sides to cover the edges inside the cutout.

Now, put the talkative pair in a conspicuous place. Then, whenever you need some entertainment, you only need to look at them and ask, "What do you suppose they're talking about?"

Design: Mostly Victorian Design
Photograph: Hopkins Associates
Illustration: Jim Stevenson

Print this article

EARN CASH, PRIZES FOR YOUR TOP SHOP TIP

Do you have a great shop tip (or two) you'd like to share with other *WOOD*® magazine readers? For each published submission, you will get at least $25 from *WOOD* magazine (as much as $200 if we devote a page or more of space elsewhere in the magazine to your idea). You also may earn a woodworking tool for submitting the Top Shop Tip for the issue.

We try not to use shop tips that have appeared in other magazines, so please send yours to only one. We do not return shop tips. Mail your tips, address, and daytime phone number to:

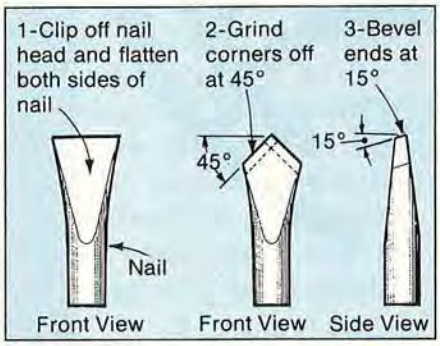
Top Shop Tip
WOOD magazine
P.O. Box 11454
Des Moines, IA 50336-1454

Turn to hammer and nails when you need a drill bit

You need to drill pilot holes for some screws, but you don't have a twist drill the right size.

TIP: Turn a nail or brad into a drill bit. Cut the head off and flatten the end with a hammer. When the width matches the hole diameter you need, file or grind the end to a point, as shown *below*. These shop-made bits work in softwoods or hardwoods, and resist breakage.

—Joe Hess, Calgary, Alta.



Router table mounts easily on tablesaw

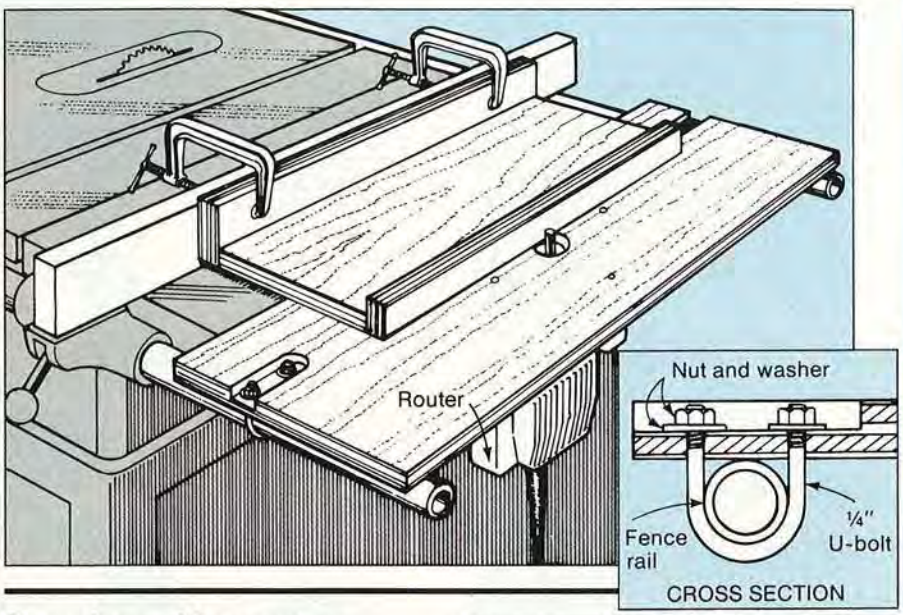
A table-mounted router simplifies many operations, but finding space for another piece of equipment isn't always simple.

For his tip, Robert wins a Ryobi RS 115 random-orbital sander shown *right*.

TOP SHOP TIP

TIP: Mount your router on your tablesaw. Simply attach the router to a piece of ¾" plywood long enough to span your saw's fence guides. Secure the table to the guides with ¼" U-bolts, as shown *below*. The router fence clamps to the saw fence for easy adjustment. Both pieces store in a small space.

—Robert Speas, Winston-Salem, N.C.

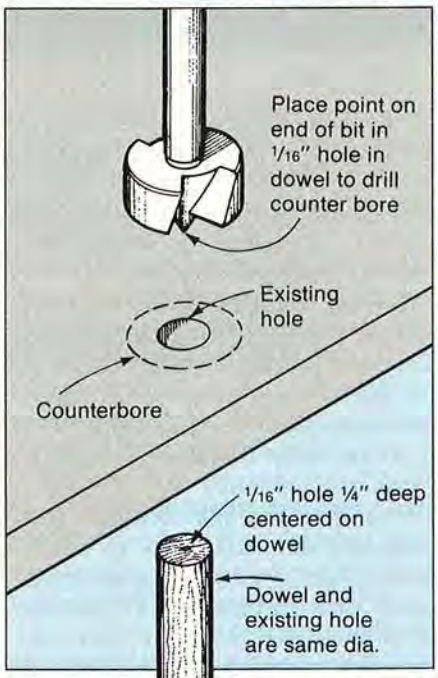


Dowel provides center for boring bigger holes

You've drilled a ⅜" bolt hole through a project part, and now you want to counterbore it with a larger Forstner-type bit. There just doesn't seem to be an effective way to center the bigger bit on the existing hole.

TIP: Find a piece of ⅜" dowel a few inches long and mark its center. Then, insert it into the ⅜" hole, placing the center-marked end up and flush with the workpiece surface. Now, employing the center-marked dowel as a guide, you won't have any trouble getting that bigger bit started. For a hole of a different size, just use the appropriately sized dowel.

—from the WOOD® magazine shop


Place point on end of bit in 1/16" hole in dowel to drill counter bore
Existing hole
Counterbore
1/16" hole ¼" deep centered on dowel
Dowel and existing hole are same dia.

Continued on page 22

Round and round it goes. Where it stops nobody knows.

The Dremel Moto-Tool is a compact, high-speed rotary tool that really gets around. With variable speeds, ranging from 5,000 to 30,000 RPMs, and over 150 specially designed bits and accessories, it allows you to complete all kinds of tasks, on all kinds of materials.

With the right bit and the right speed you can sand, carve, shape and rout wood. Change the bit, adjust the speed and use the Moto-Tool to grind, cut and deburr metal. You can even use it to shape and cut plastic or polish silver.

If we were to list all the ways you could use the Dremel Moto-Tool, this ad would go on forever. However, you can get a 95 page, detailed guide that explains bits, speeds and 175+ uses, in specially marked Moto-Tool boxes at Hardware, Home Center and Hobby Stores. Or write to Dremel, Marketing Dept., P.O. Box 1468, Racine, WI 53406-9989, for a free copy.

DREMEL® MOTO-TOOL®
High-Speed Rotary Tool

©1991 Emerson Electric, Inc.

Exclusively Performax Precision Drum Sanders

5 YEAR ANNIVERSARY

Our Customers Say: "You know you really oughta tell people that the Performax really does what you say it'll do."

Performax S/T Sander attached to a Radial Saw with Power Feed.

So After 5 Years of Ads, Here Goes: It really is rigid. It really does sand 44" wide in two passes. It really is precise. It really is affordable. It really does have new and really improved abrasive fasteners. It really is the best drum sander money can buy. It really will exceed your expectations.

A REALLY BIG THANK YOU TO ALL WHO MADE THIS ANNIVERSARY POSSIBLE.

For a Free Brochure and the Dealer Nearest You Call
1-800-334-4910
or (612) 895-9922
or write: PERFORMAX PRODUCTS, W1
12211 Woodlake Drive, Burnsville, MN 55337

RUNNIN' WITH THE PACK

PACK® HORSE

Supports 2½ tons*

The PACK HORSE is a saw horse made of Southern Yellow Pine & Birch plywood and weighs 32 lbs. When clipped together it stores easily in truck or trunk.

$99.95 a pair

Major credit cards accepted, call toll free 1-800-945-9545

DAVALCO
301 West 53rd St. suite 3D
N.Y.C., N.Y. 10019

PACK® HORSE

*Not recommended for actual use

TIPS FROM YOUR SHOP (AND OURS)

Continued from page 20

Add an apron to lap tray for easy-chair carving

Sometimes it would be nice to plunk down in the living room and relax, but you hate to give up that carving time. You could carve while you're sitting there, but you'd draw flak for scattering chips all over the sofa and carpet.

TIP: Build a lap tray from scrap lumber and plywood, and then stitch up a canvas or denim apron. Arrange the apron as shown *below*, and then staple the hem to your lap tray. Now, you're ready to carve in comfort.

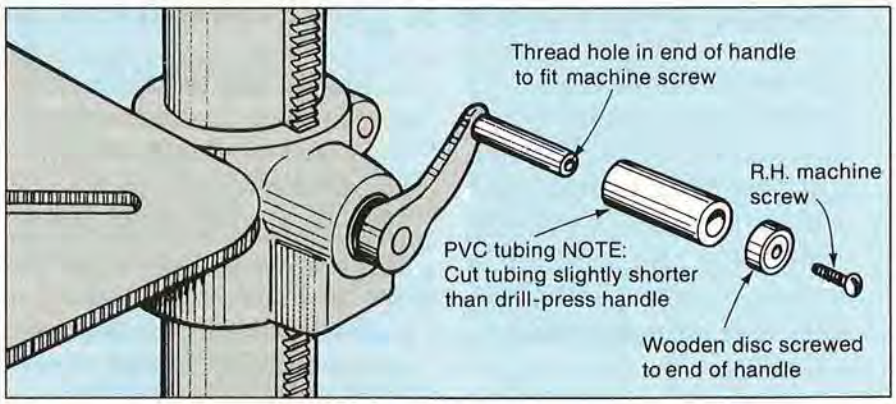
—John Blyth, Wadsworth, Ohio

More comfortable handle isn't just a pipe dream

Adjustment cranks on some woodworking machines have fixed handles. They get the job done, but when you need to change your setups often, those handles can raise a few blisters.

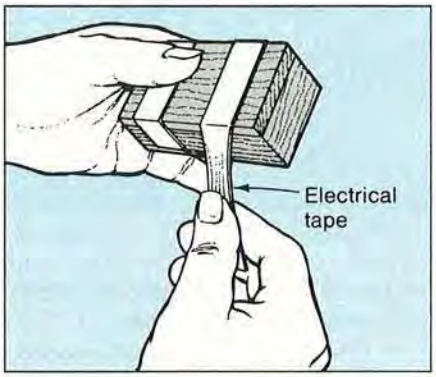
TIP: Take the friction out of adjustment by making a rotating handle from plastic pipe. Cut a length of PVC pipe to fit over the crank handle (½" pipe fit the drill-press table crank shown *below*). Drill and tap the end of the metal crank handle for a 10-32 machine screw. Then, drill a 3/16" hole through the center of a wooden disc or PVC pipe cap. Slide the length of pipe onto the handle, and secure the disc or cap with a screw and washer.

—William King, Marion, Iowa


Thread hole in end of handle to fit machine screw
R.H. machine screw
PVC tubing NOTE: Cut tubing slightly shorter than drill-press handle
Wooden disc screwed to end of handle

Plastic electrical tape holds glue joints together

Tape sure would be an easy way to clamp glued joints on a small box. Too bad masking tape tears when you try to stretch it around sharp edges.



TIP: Short-circuit that torn-tape problem with black plastic electrical tape. It resists tearing, even on sharp corners, and its stretchiness lets you pull joints up snug.

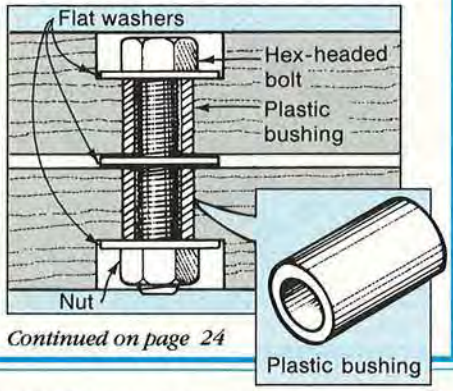
—Charles Von Herrmann, Columbia, S.C.

Plastic tubing makes pivot points sturdy

An easy way to make a pivot or hinge (as for a folding lawn chair) is to drill through the pieces and fasten them with a bolt and nut. But, metal wears the wood down, leaving a sloppy fit.

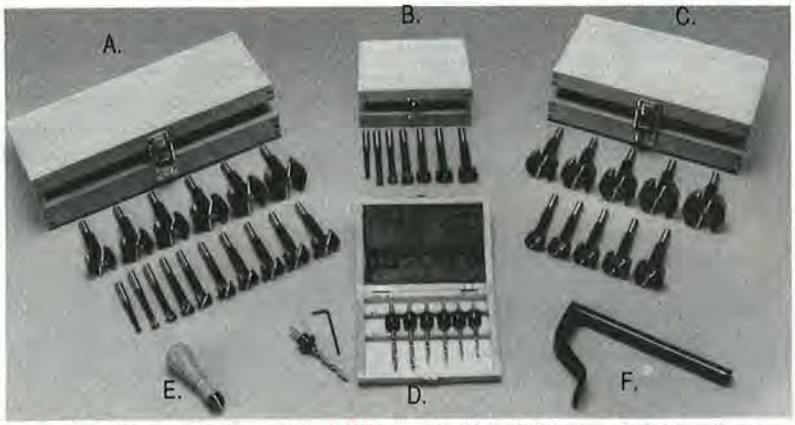
TIP: Separate the wood and the metal with plastic tubing. Select tubing that fits the bolt snugly. Then, drill through the wooden pieces to fit the tubing outside diameter. Cut a length of tubing as a bushing for each wooden part, and assemble as shown *below.*

—Bob Kettler, Cincinnati, Ohio



Continued on page 24

AMAZING PRICE BREAKTHROUGHS!



A. **16 pc. Forstner Bit Set** #77581 $87.95
All bits 3 1/2" overall, precision ground, HRC 50-52. Sizes 1/4" through 2 1/8" in wooden case. All 3/8" shanks. sizes over 1 1/2" supplied with saw teeth to eliminate overheating.

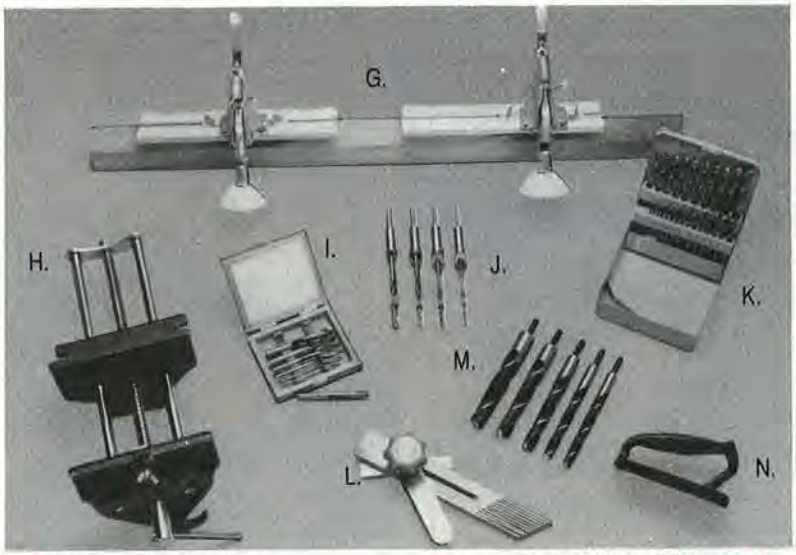
B. **7 pc. Forstner Bit Set** #77571 $27.95
All bits 3 1/2" overall, precision ground, HRC 50-52. Sizes 1/4" through 1" in wooden case.

C. **10 pc. Forstner Bit Set** #53982 $78.95
All bits 3 1/2" overall, precision ground, HRC 50-52. Sizes 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8" in handsome wooden case. All bits with saw teeth for faster heat-free drilling!

D. **22 pc. HSS Tapered Drill, Countersink/ Bore, Stop Collar Set** #12232 $26.95
For screw sizes #'s 5, 6, 7, 8, 9, 10, 12. Wood case included.

E. **Hand Countersink** #29752 $4.95
Handles all sizes of common wood screws and can handle work as fast as a powered drill with the ability to have better depth control.

F. **Classic Bench Hold-down** #54012 $6.95
Tap on top secures your work, tap at the back releases it. Great for any workbench top.



G. **Special Anti-Kickback Device**

Tablesaw Anti-Kickback	#50179	$31.95
Radial Anti-Kickback	#74131	$31.95
Shaper Anti-Kickback	#74141	$31.95
Optional 2 pc. Aluminum Track	#74201	$10.95

H. **Quick Release, Large Capacity Bench Vise**
Heavy, cast iron construction with built-in steel bench dog. Jaws are 7" wide and predrilled for adding wooden faces. Opens to 11" and mounts to a 2 5/8" or thinner section of your bench. #54002 $37.95

I. **7 pc. Carbide Tipped Bradpoint Drill Set**
Creates clean entry holes with no overheating. Sizes 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2". Wooden case included. #53992 $31.95

J. **4 pc. Mortise & Chisel Set** #54022 $39.95
Comes with sizes 1/4", 5/16", 3/8" & 1/2". Standard 5/8" shank fits most brand's mortise attachment.

K. **25 pc. Bradpoint Drill Set** #77611 $24.95
Fits any 3/8" or larger chuck. Free metal index.

L. **Anti-Kickback Featherboard & Hold Down**
Featherboard fits into miter gauge slot of your table saw and locks into position. Also prevents material from raising off the blade. #29402 $11.95

M. **5 pc. Jumbo Bradpoint Drill Set**
Comes in sizes 9/16", 5/8", 3/4", 7/8" & 1". All with 3/8" shanks. #54992 $18.95

N. **Safety Push Block**
Sure grip 3" X 5" pad. Helps keep hands away from planer, jointer or tablesaw blades. #54032 $3.95

In Ohio please add 6% Sale Tax. Minimum order $18.95.
All orders add $3.00 shipping/handling charge.

1-800-345-2396

940 W. Maple St.
Hartville, OH 44632

HARTVILLE TRUE VALUE
TOOL & SUPPLY

A Coaster Wagon of Unequaled Quality

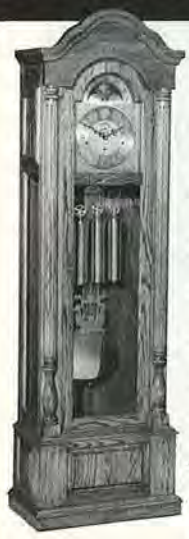
Even beginning woodworkers will have no trouble building this first rate wagon! Features wide wheel base for extra stability and safety. Side railings are removable. Build from 3/4" stock. This package includes the plan, the stake pockets, brass plated fasteners and 10" ball bearing wheels with 1/2" steel axles and caps.

Order #9905 Coaster Wagon Plan and Hardware Parts Package for $89.83 (includes shipping to 48 continental states.) MN residents add $4.97 sales tax. Mail your check today. Credit card customers call 1-800-441-9870. Absolute 100% money-back guarantee.

MORE PLANS
See hundreds of additional plans. Order our 72-page catalog for only $1 or receive catalog FREE with order.

MEISEL HARDWARE SPECIALTIES
P.O. BOX 70 W 10 MOUND, MN 55364

Do-It-Yourself Kits



Factory Direct Clocks and Furniture

Also Assembled and Finished

- Grandfather Clocks, Mantel and Wall Clocks
- Curios, Tables, Chairs, Desks, Cradle...and more!
- Solid 3/4" Black Walnut, Cherry, or Oak
- Heirloom Quality
- Solid Brass West German Movements and Dials
- Money Back Guarantee

I am interested in
❑ Do-It-Yourself Kits
❑ Finished Clocks
❑ Finished Furniture

SEND $1 FOR COLOR CATALOG

Name _____
Street _____
City _____
State _____ Zip _____
(Please Print)

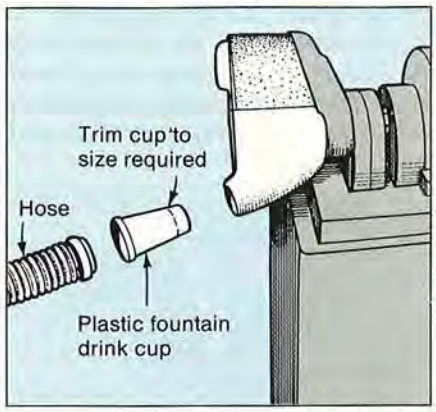
EMPEROR CLOCK COMPANY
World's Largest Manufacturer of Grandfather Clock Kits
Dept. 4116 Emperor Industrial Park
Fairhope, Alabama 36532 • Phone 1-205-928-2316

TIPS FROM YOUR SHOP (AND OURS)

Continued from page 23

Big drink cup slurps up sawdust in the workshop

You're getting all hot under the collar trying to attach your shop-vac or dust-collector hose to a shop machine. The hose and the machine outlet don't quite mate up—you're going to have to use a lot of duct tape unless you can find some kind of adapter.



TIP: Relax; go down to the fast-food store and treat yourself to a big orange drink. When you get back home, rinse out the plastic cup and cut the bottom out of it. Now you have a cone-shaped adapter to go between the hose and the machine. The soft plastic trims easily, and it's flexible enough to conform to the machine's outlet and the hose end. Fasten it with duct tape or plastic electrical tape, if necessary.

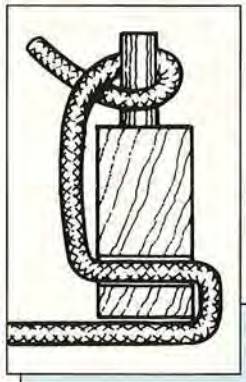
—Vence Jelouchan, Florence, S.C.

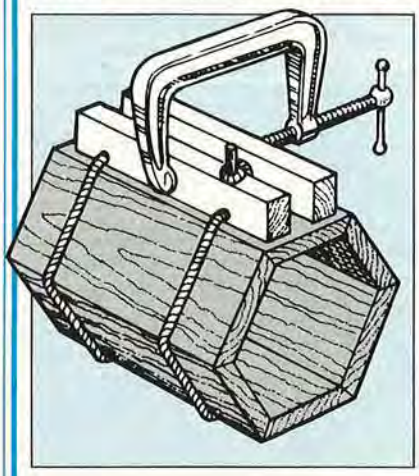
Trick ropin' saves the day when the gluing gets tough

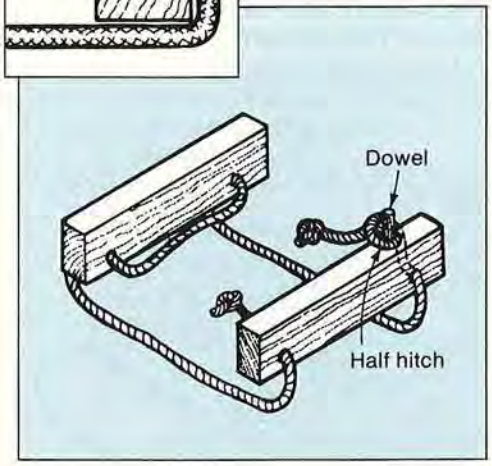
You can fiddle a lot of time away trying to clamp hexagons, octagons, or any of the other polygons you might build. A strap-type clamp is the easiest way to hold them for gluing, but what do you do if you don't have one?

TIP: Get a rope. Then drill two holes (rope diameter) through two pieces of scrapwood near the ends. Thread the rope (sash cord works great) through the wood as shown, below, and tie a knot in each end. Drill a dowel hole on an edge at one end of one piece and glue in a dowel, leaving about two rope diameters of it above the surface. Now, to clamp your work, place the wooden pieces three or four thicknesses apart and cinch the rope around the work, taking in the slack at the end near the dowel. When the rope is tight, pass its end around the dowel and back under itself to make a half hitch around the dowel. Then, draw the wooden pieces together with a C-clamp or handscrew to tighten.

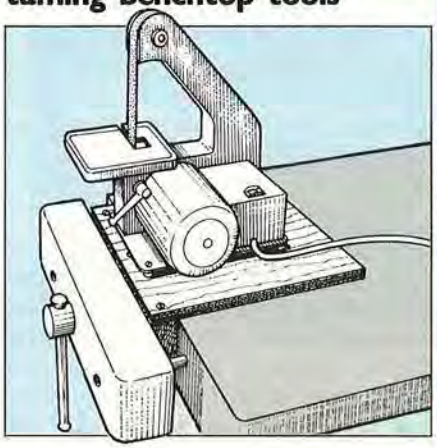
—Joe Bailey, Russellville, Ark.







The virtue of a vise: taming benchtop tools



You have so many benchtop tools now that you can't fit them all on top of your bench. You can store them somewhere else, but how do you keep a tool solidly in place when it's time to use it?

TIP: Cut a ¾" plywood base for each tool and fasten a 2 × 4" cleat to the front edge. Store them out of the way. When you're ready to use one, place it on the bench and clamp the cleat in the vise.

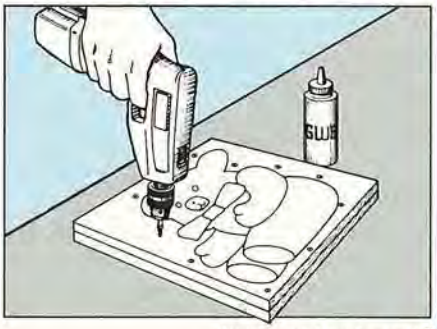
—John Hogsett, Beaver, Pa.

Drywall screws can ease your clamp shortage

You're laminating stock to be cut into project parts. But, you don't have enough clamps.

TIP: Before you start laminating, transfer your pattern to the top layer. Apply the glue and build the sandwich as usual. Then, instead of clamping it, fasten it together with drywall screws driven into waste areas.

—John J. Wells, Defiance, Iowa



Continued on page 26

FULL-COLOR YARD CHARACTERS
No painting needed • Most 2/3 Life-Size • Just glue to plywood and cut out

We have dozens of holiday outdoor scenes for Christmas, Easter, Halloween — Santa & Sleigh, Santa's Workshop, the Nativity and more!

SATISFACTION GUARANTEED!

FREE 24-page CATALOG

A. #1263 Reindeer.....$10.50
B. #1256 Caroling Bears..$9.25
C. #1250 Standing Santa..$6.75

All prices inlcude shipping charges

68-Page project plan catalog features hundreds of full-size woodworking plans #91...$3.00

IL Residents add 7% sales tax

ACCEPTED

CRAFT PATTERNS™
Dept. WM, 3N345 N. 12th Street
St. Charles, IL, 60174-5598
Call TOLL-FREE (800)747-1429

WOODWORKERS
Save on Wood - Tools - Supplies!

OVER 4000 ITEMS

Send for New 1991 132 Page Money Saving **CATALOG**

Our 61st Year

Finest Dimensioned **HARDWOODS** and Quality **VENEERS**
42 VARIETIES
1/64" to 4" Thickness

Fast service on choice kiln dried Wood and Veneers, Moldings, Trim, Hand and Power Tools, Lamp Parts, Upholstery Supplies, Clock Movements and Kits, Hard-to-Find Hardware, Finishing Materials, Books . . . over 4000 items in stock! Craftsman—Woodworker's best friend.

CRAFTSMAN WOOD SERVICE

Dept. WM1091, 1735 W. Cortland Ct., Addison, IL 60101
Please enclose $1.00 to help pay postage and handling.

Wax-Free Transfer Paper Here's Why:

Transfer your design to any surface with Saral® Transfer Paper

- Waxless and greaseless - erases like pencil with no smear
- Ink or paint over the tracing - won't skip
- Re-usable
- Available in 5 colors: graphite, white, blue, red, yellow
- Comes in Sampler and Tole Kit packages, and 12-ft. Rolls

To get your FREE SAMPLE send a self addressed, stamped business envelope to

Saral Paper Co. Inc.; Dept. W.
322 W 57th St. Suite 30-T
New York, NY 10019
212 247-0460

WOODWORKER'S CATALOG

Over 4000 products to
BUILD, REPAIR, RESTORE, REFINISH
anything made of wood!

116 pages jam-packed with fine woods, veneers, tools, hardware, moldings, finishing supplies and more— all with our 60-day money back guarantee. For your 2-yr. subscription, send $1.00 to:

CONSTANTINE'S
2054C Eastchester Rd., Bronx, NY 10461

Name _____
Address _____
City/State/Zip _____

Wood Moisture Meter

pocket-size
MINI-LIGNO
Range: 6-20% in 1% steps
Size: 1"x2¼"x5½"

$110 only

Including Case, Battery, Pins for 3/16" or 7/16" measuring depth.

Also available as Mini E, 6-36%

Lignomat USA Ltd.
503-257-8957 800-227-2105
P.O. Box 30145
Portland, OR 97230

The rbi Hawk™

As Some Things Change
- New Front Cam
- New Upper Blade Holder
- New Variable Speed

Some Remain The Same
- Finest Quality
- Alll American Made
- 3 Year Warranty
- 30 Day In-Shop Guarantee

For FREE Fact Kit
Phone **1-800-4-USA-MADE**
or mail to:

RBIndustries
P.O. Box 369, 1801 Vine St.
Harrisonville, MO 64701
1-800-487-2623
Dept. A73

BUILD YOUR OWN
QUEEN ANN FURNITURE
JUST ASSEMBLE OUR KITS

SOLID CHERRY, OAK
MAHOGANY, WALNUT
FREE BROCHURE
No Minimum Required
See us @ Booth 265 Anaheim Show

- OR -

DESIGN YOUR OWN!
with our wide variety of stock legs

Adams Wood Products, Inc.
974 Forest Drive, DEPT. M10
Morristown, TN 37814 • Phone 615-587-2942

12 SHOWS THIS FALL!

★*The* Woodworking Shows★
machinery
tools • supplies

- Baltimore/Wash.
- Boston
- Chicago
- Columbus
- Denver
- Detroit
- No. California
- Portland
- Richmond
- Seattle
- So. California
- Twin Cities

Call for free brochure
Monday - Friday 8 am - 5 pm Pacific Time
1-800/826-8257 or 213/477-8521

RESTORE FURNITURE
for
SECURE INCOME
Perfect 2nd Career

Make $200-$2,000 a day! Unlimited market; turn-key business. Free workshops. **Set-Up Shop for $2,999-$9,999!** Part-time or full-time. **Great for men, women, families.**

Make Molds*Veneer*Resilver
Strip*Repair*Refinish

Business Preview Video $19.95 - Catalog $2.00
MINUTEMAN, INC., Ste. 17
Box 8, Waterloo, WI 53594
1-800-733-1776

SQUARE DRIVE SCREWS

Simply the Best!

- Square Drive Beats Driver Slippage
- Hardened Steel for Extra Strength
- Deep Thread for Super Grip
- Also Brass & Stainless

Send $3 for Samples and Catalog

McFEELY HARDWOODS
P.O. Box 3 • 712 12th St.
Lynchburg • Va • 24505
Toll Free 1-800-443-7937
or FAX (804) 847-7136

ROTO/CARVE

AND YOUR TABLE SAW CAN REPRODUCE

- A Chair Leg
- A Duck Decoy
- A Bedpost
- A Bannister
- Hundreds of other shapes in minutes!

Manual or Automatic Drive.
Inquire below. Video $10.

ROTO/CARVE
Dept. WD1, 6509 Indian Hills Rd.
Minneapolis, MN 55439 612-944-5150

- Belt Sander 2½"x60"
- Horizontally Mounted
- Clear Working Area
- Soft Contact Wheels
- Quick Change of Belts
- Quick Change of Contact Wheels

ROTO/SAND

MAKE WOODEN LAYERED ANIMALS
SO IRRESISTABLE...EVERYONE WANTS THEM!

Unique, new, 3-dimensional animals made from three or more layers of wood. It's easy to make them yourself from our FULL SIZE patterns & instructions
....*even if you are new to woodcrafting!*

✓*the patterns of interest to you!*

☐ #LAC1 {14 DESIGNS—COW,PONY,SHEEP,PIG, DAWG,CAT,GOOSE,COON & MORE!
☐ #LAC2 {14 MORE DESIGNS—GIRAFFE,CAMEL, RHINO,ZEBRA,MONKEY,LION & MORE!

$7.50 EACH OR BOTH FOR ONLY $13.00
The Winfield Collection, Dept W101
1450 Torrey Rd, Fenton, MI 48430
Catalog of topselling designs $1.00(free w/order)

TIPS FROM YOUR SHOP (AND OURS)

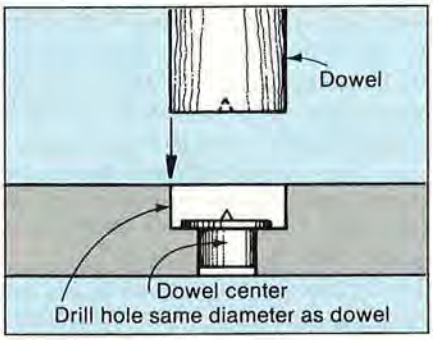
Continued from page 25

Dowel center makes quick center finder

Finding and marking the center on a number of same-sized dowels—for a batch of small ornaments, for instance—sure gets tedious. It would be great to find a quicker way to do it.

TIP: Chuck a spade bit the size of the dowel into your drill press, and bore a hole about halfway through a block of hardwood. Next, change to a bit the diameter of a steel dowel center. Piloting on the centerpoint hole left by the spade bit, drill the rest of the way through the block to accept the dowel center. Then, with the center in place, put one end of your dowel into the larger hole, and tap the other end with a mallet. Bingo! An instant center mark.

—Ray Matthews, Port Clinton, Ohio



MORE TIPS FROM OUR WOODWORKING PROS

Here are some of the other handy tips you'll find in this issue of *WOOD®* magazine.

- See how we cut slots for spline joints with a tablesaw, regular blade, feather board, and tall auxiliary fence. It's on page 51.
- For flat, wobble-free shelves, make the scrapwood shelf-hole template shown on page 54.
- Don't need a toboggan? Laminating, described on page 67, also will make bent parts for rocking chairs or other projects.
- Use the stepped-scarf joint shown on page 68 when you need a strong end-to-end joint.

Chimney sweeps at one of the regular August West training workshops.

What You Should Know About Making $1,000 a Week in Your Spare Time.

Be your own boss.

Choose your own hours.

With August West's state-of-the-art equipment and proven techniques, you'll quickly learn how to clean and service chimneys and flues and average $65 every time. Easily added services can boost this much higher—typically to $130–$140 per service call. The potential is enormous!

As a Professional Chimney Service Technician, you'll be earning as much as $1,000 a week working part-time. Many August West sweeps earn twice that each week when they work full-time.

Why Clean Chimneys?

There are nearly one hundred million chimneys, flues and stoves across the continent. Whether they are burning Gas, Oil, Coal or Wood, they *all* need to be cleaned. According to the National Fire Protection Association, they should be cleaned and serviced at least once a year to prevent disastrous fires.

There is an urgent need for this service. And there are very few sweeps.

15 Years of Service

For more than fifteen years, August West has equipped men and women to clean and service chimneys and flues.

We're a national company and 90% of the chimney sweeps in the U.S. and Canada use our system.

Fabulous Earnings

Here's what your part-time weekly income could look like:

2 service calls	=	$180 Mon
3 service calls	=	$250 Wed
3 service calls	=	$230 Fri
5 service calls	=	$380 Sat
		$1,040 weekly

August West Backs You Up

We provide you with training and support, workshops, newsletters, technical marketing advice, advertising and promotion manuals and continuing access to the growing chimney sweep community. You have all the advantages of a franchise without any of the drawbacks!

No Strings Attached

You keep all you earn. With August West there are no franchise fees, no commission payments.

For an investment of $3,995 you get the tools, equipment, and promotional materials you need to start earning money immediately.

Join the many thousands who have found personal freedom, success and the time to do the important things.

Jerry Morelle, owner of Magic Dragon Sweeps, leads an August West workshop. Beginning sweeps learn how to clean and repair chimneys and flues and sell fire protection supplies that generate a lot of additional income.

Write for a Free Information Kit today or...

Better still, pick up the phone and call us at this Toll-Free number:

1-800-225-4016
(In U.S. & Canada)
Ask for Extension **2078**

Copyright © 1991 August West Systems, Inc.

Send to: August West Systems
38 Austin St., Box 658, Dept. 4641
Worcester, MA 01601-0658

Yes, please rush me your FREE Information Kit.

Name _____

Address _____

City _____

State _____ Zip _____

Phone ( ) _____

You've ordered the rest, now buy the BEST!
SUNGOLD®
SANDING BELTS

SG

BUY 12 Belts
GET 13 FREE!

Full resin, 65% polyester...belts last longer with less stretching. SUNGOLD quality, every belt size, every grit, EVERY ORDER!

FREE SHIPPING EVERY ORDER!

BELT SIZE	PRICE/25 or 13* Belts
1x30	$16.99
1x42	17.99
2½x16	17.99
3x18	17.99
3x21	18.99
3x24	19.99
4x21	24.99
4x21¾	24.99
4x24	25.99
4x36*	24.99
6x48*	35.99

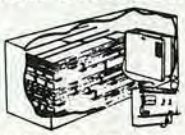
BUY 6 GET 7 FREE

NOTE: Belts are available in 40,60, 80,100,120,150, and 220 grits. An assortment will be supplied if grit sizes are not specified.

For Rush Orders
1-800-776-5467
☐ VISA ☐ CHECK
☐ MASTERCARD
PA Residents add 6% Sales Tax.

Quaker State WOODWORKING SUPPLY
4434 KUTZTOWN RD. • READING, PA 19560

DRY YOUR OWN LUMBER...



...With an EBAC Wood Drying System

Whether you're a serious home woodworker, small cabinet shop or a large wood retailer, EBAC has a wood drying system that's affordable for you.

EBAC Wood Dryers:
•save you money •give you higher quality wood
•are easy to operate •give you complete control over
•are energy efficient your wood's moisture content

CALL OR WRITE TODAY!
EBAC LUMBER DRYERS
106 John Jefferson Rd., Suite 102
Williamsburg, VA 23185
1-800-433-9011 • FAX (804) 229-3321
in Canada: 416-985-2123 • FAX (416) 985-3708

FLORAL
Glass & Mirror, Inc.
895 Motor Parkway, Hauppauge, NY 11788
516/234-2200 • 800-647-7672

PRODUCTS THAT PERFORM

Print this article

Interchangeable inserts for tablesaw blades and dadoes

Do you like the splinter-free cuts you get when your tablesaw throat plate hugs the blade, but you find it tedious to make and fit a new one every time you change blades or angles? The Wood Dynamics throat plate may rescue you.

Made of heavy ½" aluminum, the plate sports an oversized dovetailed slot, which accepts interchangeable wooden inserts. In my tests, the plate slipped easily in and out of my Powermatic 66, and remained stable and flush with the tabletop. The provided wood inserts slid firmly into the throat plate, leaving no slop. I made additional inserts easily for other blades. By raising the spinning saw blade through the installed insert, I achieved a perfect fit.

During tests on my saw, I got the clean, chip-free cuts you expect when you have complete support on the bottom of your workpiece. My dado test cuts in plywood were splinter-free. A well-fit homemade plate will yield cuts just as good, but doesn't change as quickly and easily.

Price is the throat plate's biggest liability. But, if you demand precise cuts, and would rather spend your money than your time, this shop aid may be worth the bucks.

—Tested by Bill Krier

Delux Tablesaw Throat Plate plus two inserts, made by Wood Dynamics, $88.75 for Sears model 103, Unisaw, and Powermatic ppd. from Garrett Wade, 161 Avenue of the Americas, New York, NY 10013-1299. Or call 800/221-2942. Additional inserts $1.70. Sears model 113 is $96.20 ppd.

Roll-your-own drum sanders

Here's a cleverly designed drum sander that lets you save money by using your own sandpaper. I tested two Singley drum sanders—the ¾ × 3" and the 3 × 3"—on my drill press and found them well-made and well-balanced. At the recommended speed of 1750 rpm, they removed stock evenly and quickly.

It took some practice to pull the sandpaper taut over the sponge-rubber backing and lock the ends in the drum slot. Sanding sleeves are more durable and clean up more completely than most sheet or roll papers, but my sandpaper didn't tear during sanding or when I used my belt cleaner.

—Tested by Steve Oswalt

Snigley Drum Sanders, available from Woodworker's Supply in six sizes from ¾ × 3" to 3 × 6". Costs range from $15.95 to $29.95 plus shipping and handling. Order by calling 800/645-9292.

Refinish faster and safer

Lots of strippers can remove the finish from that old garage-sale table, but generally, the quick-working ones are toxic and the safe ones are slow. Woodfinisher's Pride stripping gels, manufactured by Creative Technologies Group, are fast like the methylene chloride strippers and safe like the dibasic-ester strippers.

Between the two Woodfinisher's Pride products, you can strip varnish, shellac, and polyurethane, as well as latex and oil-based paints. In my 60° basement last winter, I used the varnish remover on a garage sale antique end table, and the paint remover on an antique bed. Each worked in 30 to 40 minutes. The original finish and stain came clean from the table with a single coat. The bed, which seemed to have been painted with latex, required one application for each of the two coats of paint.

You can use steel wool with this stripper—an advantage over other non-methylene chloride strippers. Grain raising is minimal. Other advantages: they don't dry out as quickly as the methylene chloride strippers, and have no noxious odor.

—Tested by Bill Krier

Woodfinisher's Pride, suggested retail $8.50 per quart, $14.99 per half-gallon. Available at homecenters and hardware stores. Call 800/457-7433 for a local distributor or to order direct.

Continued on page 31

WELCOME
A boutique best-seller! Plays a Xmas melody with lights blinking to the music when you push a music button. Adorned with miniature ornaments.
#01570 Plans 4.00
#04570Z Plans and Parts 12.00
Parts Kit Only #04570 8.75/Ea, 23.85/3, 68.00/10

THE CHRISTMAS SHOP

PRANCER
When you push his tail he plays "Rudolph" while his red light nose blinks to the music. About 17" ht.
#01556N Plans 3.00
#04556NZ Plans and Parts Kit 7.25
Parts Kit Only: #04556N 4.75/Ea, 12.90/3, 38.50/10

Parts Kits do not include lumber - only necessary parts.

CHRISMOOSE
Features a push button that plays "Rudolph" with flashing red nose. Die cut letters included with parts kit. About 22" wide. Great Seller!
#01574 Plans 3.00
#04574Z Plans and Parts Kit 8.50
Parts Kit Only: #04574 6.85/Ea, 18.90/3, 57.30/10

CRAFTER'S MART
Box 2342-W • Greeley, CO 80632
64-Page CATALOG: $2 with credit towards first order, Free with any order. Check, MasterCard or VISA (include daytime phone, card no., exp. date & signature). PROCESSING CHARGE: Continental U.S. $4; AK, HI, APO & FPO $10; Canada $16; Foreign 20% plus $10 (U.S. Funds). CO Res. add 3% tax. No C.O.D.s. PHONE ORDERS: 8am-5pm Mon-Fri, Sat. 9am-4pm - Mountain Time. Info: (303) 351-0676
1 - 800 - 999-3445

The Question Is...
What Has Your Router Done For You Lately?

The Answer Is...
☐ Collected Dust & Shelf Time
☐ Nothing
☐ All of the Above

The Solution Is...
☐ The rbi Router Mates

Put your router to work and make beautiful joints, picture frames, molding, and more...

Phone:
1-800-4-USA-MADE

or write:
RBIndustries
1801 Vine St.
P.O. Box 369
Harrisonville, MO 64701
1-800-487-2623
Dept. A74

Wood Carvers Supply, Inc.
P.O. Box 8928 G • Norfolk, VA 23503
(804) 583-8928 • Our 35th Year

Complete 76 page color catalog including over 2,000 carving tools, books & supplies such as carousel animal kits, gun checkering tools, ship model kits plus much more. We offer great service, quality products and a 30-day money back guarantee. Send $2.00 for a 2-year subscription.

HARDWOODS
EXOTIC & DOMESTIC
OVER 75 SPECIES
LUMBER • PLYWOOD • VENEERS
TURNING SQUARES & BLANKS
COLLECTORS SAMPLE KIT
30 EXOTIC & DOMESTIC WOODS
½" x 3" x 6" SANDED FINISH
$29.00 PLUS $5.00 S&H
Ideal for: Collectors • Schools • Craftsmen • Cabinet & Furniture Makers • Architects • Designers
1-800-423-2450
WOODWORKERS *Supply*
5402 S. 40th St. • Phoenix, AZ 85040
(602) 437-4415

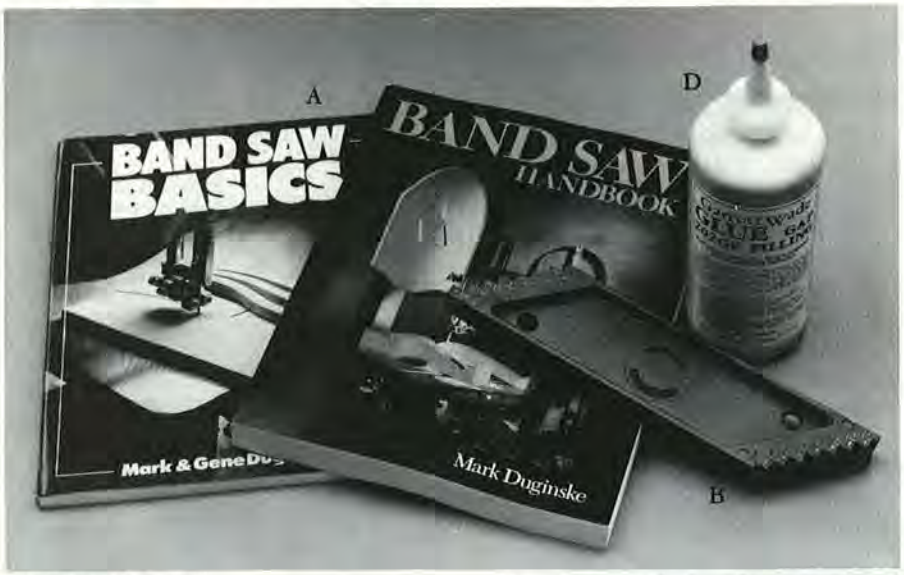
The Japan Woodworker's Catalog is . . .
loaded with the best tools you can get your hands on. In our catalog you will find a huge selection of Japanese saws, waterstones, chisels, planes, carving tools, cutlery and books. Send $1.50 for our catalog and supplements during the next two years.
THE JAPAN WOODWORKER
1731 Clement E13, Alameda, CA 94501
Phone 1-800-537-7820

WOOD TOY
★ Patterns
★ Parts
★ Wheels
★ Many New Patterns to Choose from.
★ Executive toys

SEND $1.00 FOR NEW CATALOG & RECEIVE COUPON FOR **FREE** WHEELS & AXLE PEGS.
toys and joys
Box 628W Lynden, Wash. 98264

Another "buy 1 tool get our 228 page tool free" offer.

Just a few of the unique woodworking tools of the 3,500 others available from our most versatile tool, the 1992 Garrett Wade Catalog.
The 228 page catalog is Free with any order from this ad. Or if you would just like the catalog, send us $4.00 with your name and address.



A / 2 Band Saw Books *by Mark Duginske*
Learn what makes your bandsaw tick. Tune-up and maintenance; blade selection, tracking and tensioning; plus cutting methods for various woods and other materials. Hundreds of tips and shortcuts. Unlock your saw's potential.

02L09.03	Band Saw Basics	$ 9.95
16L04.02	Band Saw Handbook	$16.95

B / The Saw Setting Gauge That Can Be Read From Any Position
Most gauges have at least one or two main weaknesses. They either rest partially on the insert plate which is usually not the same height as the main table, or are so thin that it is difficult to ensure that teeth are being gauged at the top of the arc. This gauge is made from machined ¾" thick Aluminum and is 9" long. With ¼" graduations on one end and ⅛" on the other, it will indicate any height from ⅛" to 2". Most useful for table saws but also handy for routers. The markings are vertical on one face and horizontal on the other, so you can read them easily and accurately.

71K26.02	Saw Setting Gauge	$17.95

D / Our 202GF Gap Filling Glue Fills Gaps
It has a very high solids content so that small gaps in our joinery are actually filled – with strength. And the "squeeze-out" beads right up and chips off when dry. No soaking in to ruin finishes. Dries to a light tan. Water clean-up.

62J01.01	1 pt. 202GF	$ 7.25
62J01.03	1 qt. 202GF	$13.10

C / 1/16" Super Narrow Blades
You may have never seen a blade like this. A 24tpi raker style, it produces smooth cuts while making incredibly tight turns. We recommend using our Cool Blocks with these delicate blades, because they can be set closer to the blade without danger of overheating.

Cabinetmaker's Special Bandsaw Blades
A Garrett Wade exclusive. They look like "skip tooth" blades. But each tooth is actually formed as a hook, with every 5th tooth an unset raker. The result is a very smooth cutting blade that feeds easily. ¼" blade is for general work, and ½" for resawing and heavy straight sawing.

93½" Blades (Delta 14" and copies)		
33K11.01	1/16" Scroll	$17.75
33K11.02	¼" (4 tpi) Cabinet	$12.95
33K11.03	½" (3 tpi) Cabinet	$13.95
80" Blades (Sears 12")		
33K12.01	1/16" Scroll	$16.25
33K12.02	¼" Cabinet	$11.95
33K12.03	½" Cabinet	$12.95
72" Blades (Shopsmith)		
33K13.01	1/16" Scroll	$14.95
33K13.02	¼" Cabinet	$11.25
33K13.03	½" Cabinet	$11.95

E / The "Blind Nailer" Used To Be A Staple In Every Finish Carpenter's Tool Box
This unique tool allows you to set nails or brads invisibly. Slip the special chisel, with its finger nail shaped cutting edge, into the positioning jig and tighten the clamping screw. Place the flat sole on the wood and strike the end of the chisel with a firm tap with the palm of your hand. The Blind Nailer will lift a perfect small chip from the surface. Hammer your nail or brad in and then glue the chip back in place.

44K01.04	Blind Nailer	$19.95

F / Special Bandsaw "Cool Blocks" Prolong Blade Life & Increase Accuracy
Made of a special graphite impregnated Phenolic laminate, this set of 4 replaces your upper and lower side blade guides. Cool Blocks run cooler and are more slippery than conventional steel guides. Since they can be set actually touching the blade, they give you better control of the cut.

Model		
33K09.01	"A" Delta 14"	$11.95
33K09.02	"B" Sears 12"	$11.95
33K09.04	"D" Shopsmith	$12.95
33K09.05	"E" Old Sears (¼" Rd.)	$11.95
33K09.06	"F" Jet 14" (fits Delta copies)	$11.95
33K09.20	"K" New Tilt-Head Sears	$16.95

Garrett Wade Co., Inc.
161 Avenue of the Americas
New York, NY 10013 Dept. 138
Call Toll Free 800-221-2942
(NY 212-807-1757 No Collect Calls Please)

Please send me these Garrett Wade tools and include a FREE 1992 Catalog with my order. *(Prices good until September 14, 1992)*

Name: _____
Address: _____
City: _____ State: _____ Zip: _____

☐ Check or Money Order ☐ Discover
☐ Visa ☐ MasterCard
☐ American Express

Expiration Date: _____

STOCK#	QTY.	DESCRIPTION	PRICE		TOTAL
GW	1	1992 Catalog (free with order from this ad)	$4	00	

New York Residents add applicable Sales Tax
Shipping & Handling: $3.25 for order total up to $10
$4.55 for $10.01 to $20
$5.45 for $20.01 to $50
$6.90 for over $50.

Sub Total	
Sales Tax	
Shipping	
Grand Total	

Continued from page 29

Bit cleans dado bottoms

If your dado blade doesn't make the flat-bottomed cuts you require, you can still get striking results by following up with new bottom-cleaning router bits from Paso Robles Carbide. The bits, available for ¼" collets in ½", ⅝", and ¾" sizes, will smooth and square bottoms of existing grooves or dadoes.

In testing the ¾" bit in plywood, oak, and pine, I found it consistently leveled rough or concaved bottoms (*see Dado Cutting Tools, page 60*).

The clean-out bit will slightly deepen your dadoes and grooves, so make allowances. With my router, I needed fast passes to prevent burning.

Because most plywood is undersized these days, you'll need to cut narrower dadoes to snugly hold a "¾"" plywood shelf. That means you'll want to use the ½" or ⅝" bottom cleaner, in that dado. Use the ¾" bit with a router table for dressing rabbets, mortise-and-tenons, and half-lap joints.

—Tested by Bob McFarlin

Paso Robles Carbide Bottom Cleaning Bits, from WoodWorkers Supply. ½" bit, No. 809380, $26.45 ppd.; ⅝" bit, No. 309387, $27.45 ppd.; ¾" bit, No. 809394, $29.45 ppd. Call 800/645-9292.

BUILDING OUR NAME...

BUILDING YOUR DREAMS...

ONE YEAR WARRANTEE

SALE

WIDE BELT SANDER

CT-2575 24" $4290
CT-3775 36" $5390

SHAPER

SP-3400 1.5 HP..$469
SK-30SPA 3 HP.. $849
SP-34T TILTING..$1695

BAND SAW

BS-1316 16" $299
BS-0163 16" $499
BS-0183 18" $649
BS-0202 20" $1290

TABLE SAW

HTS0012 12" $789
TS-1010 10" $1295
TS-1414 14" $2690

JOINTER

JT-1007 7" $309
JT-1008 8" $639
JT-0012 12" $1895

WE SPECIALIZE IN CUSTOMER SATISFACTION

LOBO

9034 Bermudez Street,
Pico Rivera CA 90660
MAIN OFFICE:(213)949-3747
ATLANTA:(404) 416-6006
(800)786-5626 (order only)

LOBO POWER TOOLS

new

PRECISION MEASURING TOOLS

GAUGE-IT

FOR PLANERS AND TABLESAWS

2 GREAT SHOP TOOLS!

ANODIZED ALUMINUM CALIPER FOR THICKNESS PLANERS

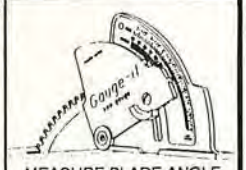
$14.95

PLUS $ 1.00 P/H

$19.95

PLUS $ 2.00 P/H

MEASURE BLADE HEIGHT



MEASURE BLADE ANGLE

PATENT APPLIED FOR

MADE IN THE U.S.A.
QUALITY PROUD

CONVENIENT HAND HELD TOOL USED TO ACCURATELY MEASURE BLADE HEIGHT AND ANGLE **EVEN WHILE ADJUSTING THE BLADE** ON YOUR TABLE SAW.

IT'S TWO TOOLS IN ONE!

2 MODELS AVAILABLE, ONE FOR RIGHT SWINGING BLADES AND ONE FOR LEFT SWINGING BLADES.

Please send me one (RIGHT), (LEFT) saw gauge @ $19.95 or 1 thickness gauge @ $14.95.

Order Direct - Fast!
1-800-727-7173
7 day - 24 hour
GUARANTEED

To order by CHECK or for a free BROCHURE, write to:
E.F. Boerder Co. 4514 Cole Avenue #101 Dallas, Texas 75205
30 day money back satisfaction guarantee. Sorry no C.O.D.'s

MasterCard VISA

Freud Factory Rebate.

Easy as 1-2-3

1. Buy our Biscuit Joiner or Plunge Router between September 1, 1991 and January 31,1992.
2. Mail rebate coupon.
3. Receive rebate check for $30!

Rebate $30!

Biscuit joining is rapidly becoming the preferred method of joining wood. With the Freud System you can create an exceptionally strong joint that is quicker and easier than doweling or other methods.

The Freud JS100 joiner system is designed for the woodworking professional who relies on his power tool. It has an industrial duty cast housing, a solidly built drive system and a powerful 5 amp motor that will provide many years of service. But the performance from any power tool depends on the quality of the blade or cutter. Freud is world renowned for carbide cutting tools and the blade for the JS100 is made using the same advanced technology in the same factories. With this system you get a carrying case, blade removal tools, sample bag of biscuits, complete instruction manual and our special lubricant. Combine all this and you will understand why this has been the tool preferred by many professionals, and leading authorities in the field.

Now is the best time to buy the Freud JS100 Joiner System. Go to your participating dealer and get your best price and we will send you a check for $30.*

Rebate $30!

If you're looking for a power house of a router look no longer. This machine has both the power and features you have been looking for. It is rated for 3 1/4 developed horsepower at 15 amps. This is the most power you can get from a hand held power tool that will run on standard household current. The technically advanced collet system on the FT2000 is the longest collet available to secure bits even under heavy load. This machine is also packed with many other features like the reverse flow fan to keep the work surface clear and the ergonomically designed handles for maximum control and comfort. But the one feature that makes this the ideal machine is the Micro-Adjustment Knob. Router table operations are a dream because micro cutter height adjustments can be easily made.

This solid work horse has always been an excellent value but if you buy one now from a participating dealer we will send you a check for $30* that you can spend on bits, wood or just put in the bank.

freud®

Precisely what you need.

*Rebates available only on Freud JS100 and Freud FT2000 purchased from participating dealers between September 1, 1991 and January 31, 1992.

For the name of your participating dealer or full details on the rebate call 800-472-7307.

TEAK

The tropic's top seafaring stock

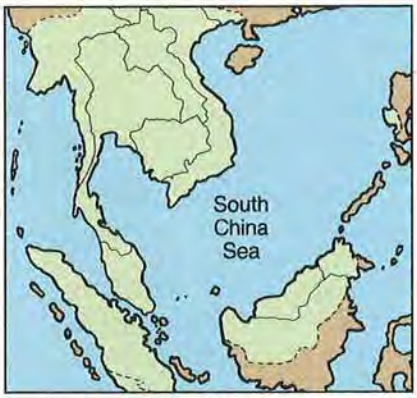
Sailors and traders visiting India and China in the early 1800s were caught up with the wood they found in widespread use as seagoing stock. Teak, with working and structural properties surpassing even those of their traditional oak, soon became the prime nautical wood of Europe and America. Weather-resistant, tough teak still ranks as the favorite for boat decks and trim. But, it's the story of how this hardwood arrives in craftsmen's hands that rivals its history.

Teak harvesting begins with the girdling of selected trees deep in a Southeast Asian rain forest. This allows the timbers to die and dry on the stump over a period of years, making them tons lighter at logging time. Because of the terrain and its remoteness, elephants play a major role, moving the massive logs miles to a river. There, the teak lies for months, awaiting monsoon rains to fill the banks so it can float from the interior. In traditional forest harvesting, this seasonal reliance often results in a five-year delivery time.

Wood identification

Teak (*Tectona grandis*), a native species in the rain forests of Burma, India, Laos, and Thailand, now grows in about 40 countries throughout the tropics. In Java, for instance, teak was planted generations ago, and the trees are managed for sustained yield.

Naturally occuring teak grows to heights of 100′ and diameters of 12′ or more in about 300 years. Plantation-grown teak gets taller, but never as large in circumference, although it can be harvested in 60 years.

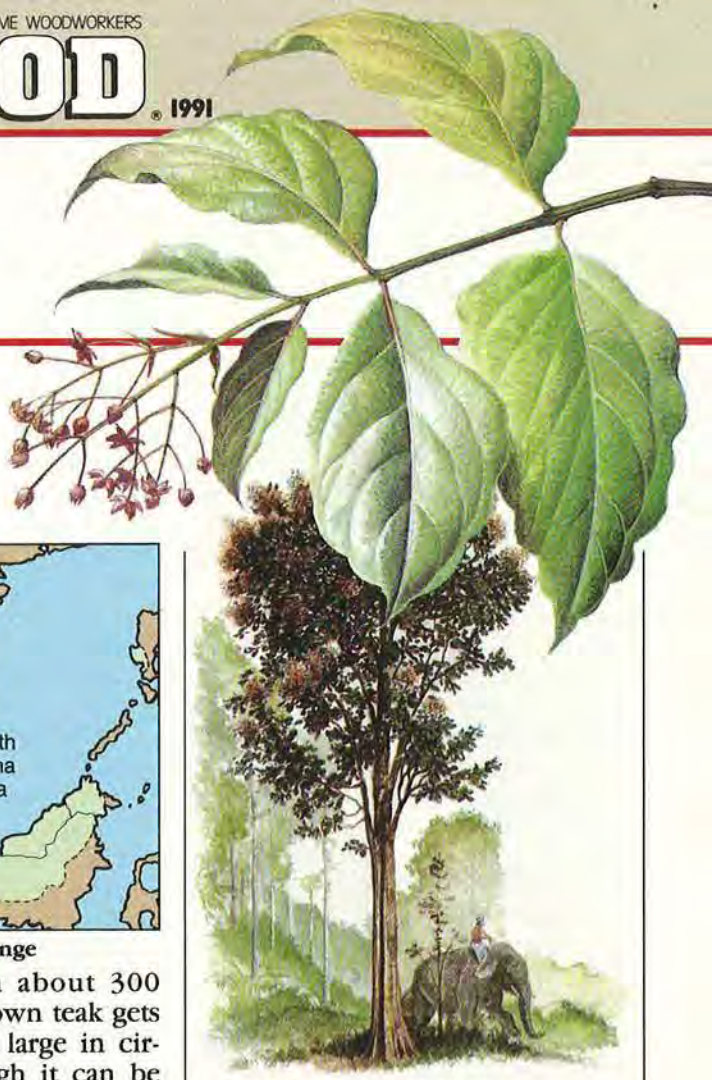


Natural range

If size alone didn't distinguish teak from other rain forest trees, its enormous leaves would. They can measure a whopping 24×36″, and their top surface is rough enough to sand with!

Teak has a thin layer of yellow sapwood, but it's never seen by woodworkers. Importers and dealers instead favor boards of only coarse-textured, golden-brown heartwood. Teak, though, depending on its growing conditions, may have a greenish tint, small stripes of yellow and darker colors, or an occasional mottle figure. At about 40 pounds per cubic foot dry, teak weighs slightly less than oak.

Silica, which the growing tree extracts from the ground and distributes throughout the wood, gives teak an oily feeling and causes finishing problems. Freshly sawed boards also carry the aroma of old shoe leather.



Uses in woodworking

Because it defies the elements, teak makes the perfect candidate for garden furniture and outdoor structures. Indoors, teak always has been prime stock for clean-lined furniture, as well as all forms of cabinetry.

Cost and availability

The Burmese set the grading and pricing standard for teak over 100 years ago. That's why teak's price goes up with the width and length of the board. For instance, First European Quality teak boards 1″ thick will be at least 8″ wide and bring a premium of $8 or more per board foot. Narrower boards cost less.

Prime teak-faced plywood runs considerably more than red oak or cherry panels, but at around $85, falls below the cost of walnut. Veneer prices fall into the $1.50 per square foot range of most imported species.

Continued

PERFORMANCE
PROFILE

Teak
(Tectona grandis)

Teak heartwood

Woodworkers with lots of experience working teak say that in old-growth trees from Thailand and Burma, the silica in the wood has broken down, making it easier to machine. However, younger, plantation-grown teak has practically the same performance qualities as old-growth and you'll notice little difference in machining, although the color may vary, depending on the conditions at the location where it grew.

Machining methods

Because teak does vary in color according to its origin, try to buy all the boards you need for your project from the same shipment so the overall tone of your project will be uniform. *When working it, keep these tips in mind:*

- Due to its silica and oil content, teak slides easily over a machine's iron bed. You'll have no problem planing and jointing it, except that teak does dull blades more quickly than other hardwoods.
- In spite of its hardness, teak rips and crosscuts more easily than oak. Always use carbide blades.
- Teak poses no routing problems, but it quickly dulls bits.
- With proper woodworking drill bits and high speed, you can put clean holes in this wood without breakout.
- Sanding teak requires frequent stops to clear its sticky dust away with a stiff brush. *Caution:* Some people have an allergic reaction to teak dust.
- Epoxy or resorcinol adhesives work best when joining teak. But first scrub all wood to be joined with acetone, then let it dry.
- Finishing teak poses the most difficulty. The wood doesn't take stain exceptionally well, and traditional clear finishes (except lacquer) can be a problem. For instance, regular polyurethane won't set up. But two-part polyurethane, the type for marine use, will. That's why teak is frequently coated with a penetrating oil, such as tung or teak.
- For outdoor use, teak doesn't require a finish, only an occasional scrubbing with soap and water to clean the surface. The wood will eventually weather to a pleasing gray color.

Carving comments

Teak ranks high in hardness, but you can carve it with chisels and a mallet.

- The wood takes fine detail. However, the silica in the wood dulls chisels in no time.
- Take shallow cuts, despite how easily the wood seems to slice away, or else your cutting edge may wander in the coarse-grain.
- Power carvers should arm themselves with carbide cutting burrs to endure this wood.

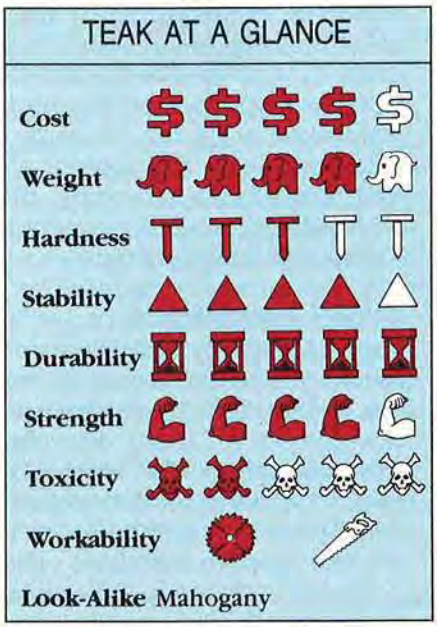
Turning tricks

Except for its tendency to dull tools, teak turns exceptionally well in response to shearing cuts. Some teak, though, primarily from India, may be somewhat brittle and coarse-textured, causing chipping or splintering.

SHOP-TESTED TECHNIQUES THAT ALWAYS WORK

Any exceptions—and special tips pertaining to this issue's featured wood species—appear under headings elsewhere on this page.

- For stability in use, always work wood with a maximum moisture content of 8 percent.
- Feed straight-grained wood into planer knives at a 90° angle. To avoid tearing, feed wood with figured or twisted grain at a slight angle (about 15°), and take shallow cuts of about 1/32".
- For clean cuts, rip with a rip-profile blade with 24–32 teeth. Smooth cross-cutting requires at least a 40-tooth blade.
- Avoid drilling with twist drills. They tend to wander and cause breakout. Use a backing board under the workpiece.
- Drill pilot holes for screws.
- Rout with sharp, preferably carbide-tipped, bits and take shallow passes to avoid burning.
- Carving hardwoods generally means shallow gouge bevels—15° to 20°—and shallow cuts.

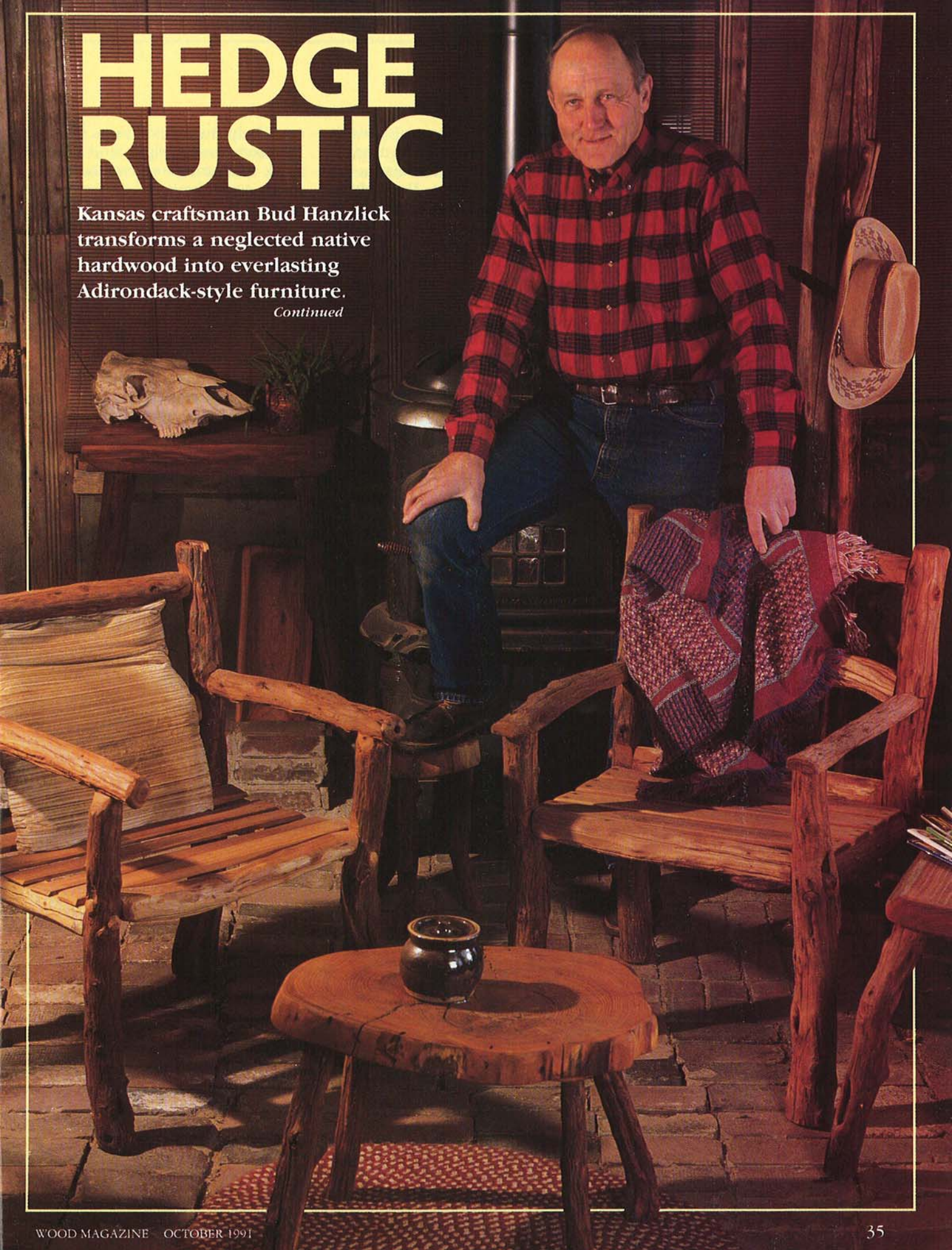


Compiled with woodworkers Jim Boelling, Jim Downing, and Sam Radding Photograph: Bob Calmer Illustration: Steve Schindler

HEDGE RUSTIC

Kansas craftsman Bud Hanzlick transforms a neglected native hardwood into everlasting Adirondack-style furniture.

Continued



HEDGE RUSTIC

Print this article

Nothing escapes the bright yellow dust in Bud Hanzlick's Belleville, Kansas, shop. His drill press wears a thick coat. So does the radial-arm saw across from it. And in a corner of the room, the lathe sports a golden cloak.

"Making these integral dowels really kicks it up," Bud says, sweeping a large hand across his denim-covered chest. He nods to the small ocher cloud just created, "But, boy, I like this wood."

No matter what you call Bud's curry-colored stock—*bois-d'arc* as the early French explorers did, Osage-orange as do the wood technologists, or just plain hedge as a Kansan like Bud does—you can't help but marvel at its sturdy handsomeness. Bright and rock-hard, *Maclura pomifera*, belongs to the same family as the mulberry and the fig.

A rustic revival

Even before he started crafting his rustic furniture, Bud had always worked wood, one way or another. Adding on here and there over time, he built the cozy frame home he and his wife Pat share. Their kitchen even features oak countertops and floors he made of planks salvaged from a nearby church.

With an old drawknife, Bud scrapes off the outer bark of his hedge fence posts to reveal the colorful wood beneath.

But it wasn't until Bud, for 20 years a Rock Island Railroad switchman, got laid off six years ago that the idea of rustic furniture clicked. "I was wondering what to do with all my new free time," Bud recalls. "Then I was out at the farm one day and spotted a barn post of hedge that the cows had polished smooth. It was darn nice. Why not make furniture out of it?"

No one that Bud knew had ever worked hedge into furniture, or anything except fence posts for that matter. But that didn't stop him. He rounded up some old hedge posts and a few sawed slabs and made a bench.

"I made a few more benches, then a chair or two," Bud remembers, "always trying to improve." The pieces looked rustic, but he thought that an honest use of the material. Hedge *is* rustic. Now, Bud offers chairs, settees, tables, benches, coat racks, and planters.

Hedge has history

"Hedge is just as tough as the pioneers around here that planted it," notes the raw-boned 58-year-old, ready to relay some background.

Originally confined to the Red River area of Oklahoma, Arkansas, and Texas, Osage-orange was widely planted by settlers in farming areas from western Kansas to the East Coast. Before barbed wire, the thorny, fast-growing trees made excellent fences. "In fact," Bud says, "depending on how thick it grew, even chickens couldn't get through."

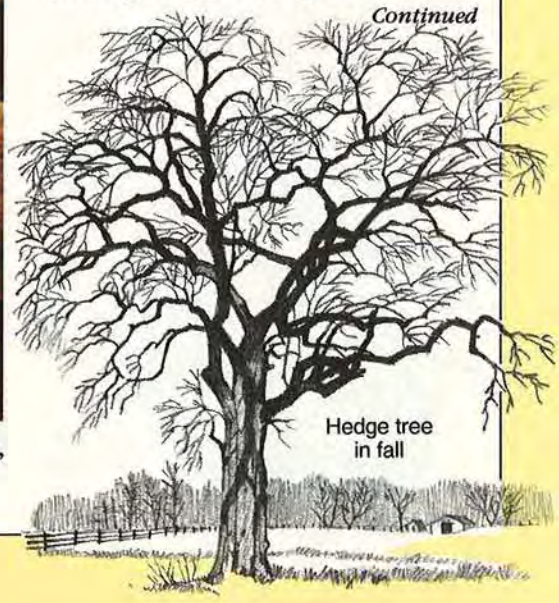
According to Bud, whose ancestors helped settle the barren plains, farmers planted Osage-orange heavily along Kansas fields in the mid-1800s. "The state even paid folks to put it in," he says.

But history relates that Bud's hedge served other purposes, too. First, the Osage Indians shaped top-notch bows from it. Then, the tough-as-nails wood became wagon-wheel hubs and rims, bridge pilings, railroad ties, pulley blocks, and even paving. The dye industry used extract from it to produce yellow, tan, and khaki. And the tree's large, rough fruit—*apples* in hedge country— fed wildlife, and ground-up, fed livestock, too.

Hedge's role changed as agriculture grew, however. Fences occupied less space than trees, and mechanization meant larger fields. So, down came the rows of hedge. Thirty years ago, Bud helped harvest the hedge on area farms, turning it into fenceposts.

Continued

Because the hard hedge would quickly lay waste even the best carbide turning tools, Bud saws the round tenons at his lathe.



HEDGE RUSTIC

"You can't beat hedge for posts," Bud points out. "It won't rot, and it resists insects and weather. They'll last 60 years sunk in the ground. We used to get 75 cents for a post back then. There's still some farmers that will pay $4 for a brand new one."

Over the years, farmers harvested most of the nearby hedge. That means Bud has to go farther and farther for his wood. "The big stuff that I have sawed into boards at the mill comes from a guy who contracts to log out hedge between fields. But mostly, I get by with old, pulled fenceposts or unused ones that I find at farm sales," he explains.

Metal meets its match

Most woodworkers shun hedge. True, the wood has a refreshing yellow color when first sawed. But before long, it turns a dark orange-brown. Then, too, it seldom comes in very large pieces because the tree rarely grows big. And any hedge will likely have knots, holes, and ingrown bark. It's also difficult to season. But it's machining hedge that tries a woodworker's patience.

For his furniture's arms, legs, and stretchers, Bud selects small-diameter posts from his outdoor stockpile. Then, he scrapes away the weathered-gray, dirty bark with a drawknife. Next, he attacks the surface with a wire brush chucked into his portable electric drill. The result: cleanly furrowed reddish-orange stock, and disabled tools. "In two days of cleaning up posts, I'll wear a new steel brush down to the nubs," he says. No wonder. Hedge has the tightest of grain and rates twice as hard as hickory. That's enough to topple any cutting edge.

"The carbide blades I put on my saw only last about two months," notes Bud, "and I have to constantly resharpen my spade bits." Bud doesn't even count all the chainsaw chains he's retired before their time, or the grimace he gets from the shrugging sawyer when he brings large chunks to the nearby sawmill.

But this Kansan is actually thankful for all the fuss and bother. Because that means he's about the only one drawing on the dwindling local supply. "Most folks don't even gather it for fireplace wood," Bud comments. "It'll spark and kick a glowing coal out four feet."

Prices for his Bekan Rustic Furniture go from $25 for a small bench to $150 for a chair and $250 for a settee. He markets his work at craft fairs, but gets lots of direct orders, too. "Pat and I even drove a pickup load back to a Pennsylvania buyer last year," an-

A hydraulic jack pins the stick of twisted wood in place for drilling the mortise. Note how Osage-orange's yellow dust coats the work area.

Hedge fruit and leaves

nounces Bud. Grinning, he adds, "And I could have sold all of it at rest stops along the interstate highway before we got there."

Joinery that takes abuse

Bud's chosen stock grips nails and screws in a hammerlock. The hitch is starting them, then driving them home.

The craftsman admits to some trial-and-error before he hit on the right joinery, though. He first tried bolting his hedge furniture together, but it appeared too clumsy. Next came drywall screws—not right either. Plain old nails worked (predrilled holes, of course), with lots of effort. The technique that won out, although it took more machining, was mortise-and-tenon joinery. Bud calls it "integral doweling."

"I form a 1″ diameter, round tenon on all my chair legs, arms, and stretchers," he explains. "Then, say in a chair arm, I'll drill a hole to accept it. When it's glued up, that joint will last as long as the wood."

In an unusual machining technique, Bud *saws* the round tenon while the wood spins on the lathe, as shown in photo, *page 37*.

The 1″ hole Bud drills in the chair arm will receive the tenon of the leg. On some furniture, Bud leaves the tenon exposed as a detail.

At one end of the lathe bed he mounted a portable circular saw that slides back and forth on a carriage. When he chucks a hedge stick in between centers and sets the lathe spinning, he turns on the saw. By moving the saw blade gradually against the stick, and the chucked-up stick back and forth along the bed with a cranking mechanism, Bud shapes a tenon in a minute or two.

To accurately drill the 1″-diameter mortises in round pieces of hedge, Bud rigged up another unusual fixture. He built an open-sided box to rest on the drill-press table. Then, to keep the often-crooked pieces from turning under the bit, Bud installed a small hydraulic jack at one end of the box. "When I put the stick in place, I squeeze it in tight with the jack," he says."

Other than the tenon-making at the lathe and the drill-press operation, Bud's furniture stock receives little machining. "I don't plane my boards, just smooth them up with a belt sander," he comments. "The wood in rustic furniture shouldn't be slick."

Finishing? Forget it. "Hedge really doesn't need any finish. Outdoors, it's going to weather to gray and last forever," Bud says. "Indoors, it'll darken some no matter what you do, especially if it's in sunlight. But the wood doesn't need protection. A finish would just darken it."

You have to take Bud's word for it. Afterall, he's probably the only craftsman making hedge furniture. Besides, Bud offers a guarantee: "If it doesn't last, I'll furnish you with a new piece!"

For a brochure describing Bud's hedge furniture, write:
Bekan Rustic Furniture
P. O. Box 323
Belleville, KS 66935.

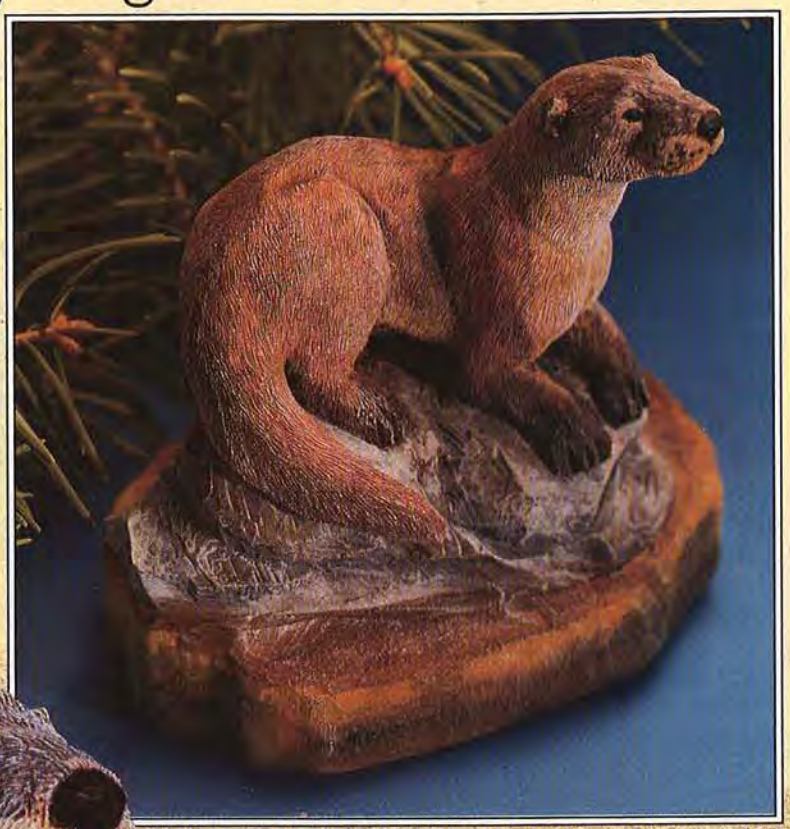
Written by Peter J. Stephano
Photographs: Perry Struse

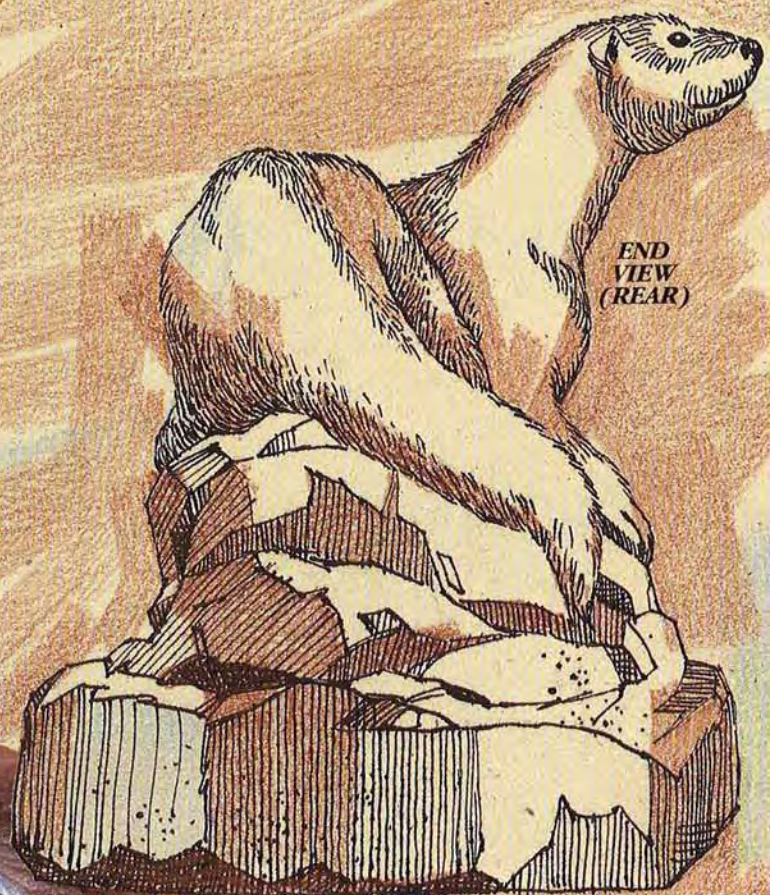
Carve a Desiree Hajny original

HERE'S OTTO

Blue-ribbon wildlife carver Desiree Hajny created Roscoe the Raccoon for *WOOD*® magazine readers in the June 1989 issue. You responded enthusiastically, so we asked her to design another lifelike animal carving for you. Well, gather your gouges, gang; it's time to meet Otto the Otter.

Print this article





Few creatures appear to enjoy life as much as otters. Invariably, they're shown sliding down slippery slopes, lolling about in the water, or just generally romping.

With this zesty personality in mind, champion wildlife carver Desiree Hajny perched Otto on a river rock, alert and itching to jump in. You almost can see Otto's tail switching as he surveys his stretch of river.

Get Otto into shape first

Unless you're starting with the precarved roughout, trace the full-sized front- and side-view patterns onto your carving block, and bandsaw to shape.

Before you start carving, study Otto's build, the shape of his head, and his facial contours in the photos and illustrations. Then, begin carving with your knife and small gouges.

Turn your carving frequently as you work. Don't concentrate too much attention on any one area at this stage. Instead, remove wood from the entire carving to get the proper overall shape and proportion. And, allow yourself some room for detailing the head and face. About ½" of extra wood there should do the trick.

Continue your Otto-body work

Strive for a flowing surface as you carve Otto's body. Otters are sleek animals, so don't make yours too cylindrical or chunky.

If you were to cut a section across Otto's middle, you would have a triangle with bowed-out sides and base. His backbone ridge (most prominent between the shoulders and hindquarters) represents the tip of the triangle; his belly, the base.

The ridge disappears at the hips, Otto's widest point. Moving up front, study the photograph *opposite page bottom* before carving the shoulders and chest. Notice how the muscles appear like another layer, molded to the body.

Give Otto solid footing

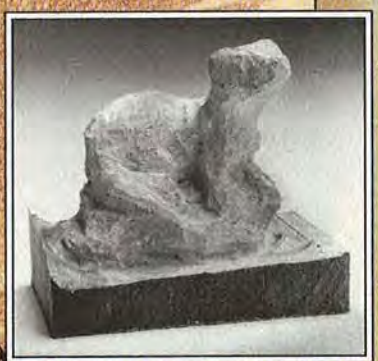
Otters live around water and eat fish. To get about on soggy land, propel themselves through water, and snag food from the river, they have webbed, clawed feet.

Carve each foot to approximate shape; then, divide each into five toes with V-cuts (see illustration, *page 43*). Don't separate them completely—the feet won't look webbed if the cuts are too deep or too wide. Pick out the claws with your knife tip.

Put a good head on his shoulders

As the body takes shape, begin removing the excess wood from the head. Make the head about as thick as the neck from the side view, a little wider than the neck when viewed directly from the front. Otto's backbone line flows smoothly up his neck to the top

Continued next page



Tools and Supplies

Carving stock

Basswood, jelutong, or other carving wood, 3×5×5". Or, order a 70 percent precarved basswood roughout, shown *left*, for $12 (two for $22) ppd. in the U.S. from Rossiter Roughouts and Carving Supplies, 1447 S. Santa Fe, Wichita, KS 67211, call 800/8-BLANKS.

Knife

- bench carving knife

Gouges

- ½" No. 3
- ½" No. 5
- ⅛" No. 7
- ⅛" No. 9
- ¼" No. 9

V-tool

- ¼" 45°

Woodburner

- fine detail tip

of his head, where it changes to a slight depression (photo *below).*

From the side, Otto's head shows two major forms: a rough circle encompassing the ears, eyes, and jawline, and a blunt, half-egg shape for the muzzle. Viewed from the top, the head features appear slightly squared.

Shape the head with small gouges and a knife. The scoop-like ears sit low, near the back of the head. Carve slight hollow spots in front of the ears, on the muzzle at the inside of the eyes, on top of the head, and under the nose.

The top of Otto's head shows a slight depression. His ears sit low on the sides of his head. Note the nose shape.

With your knife, carve the nose as a baseball diamond shape with rounded upper sides. Place the eyes about midway along lines extending from the tip of the nose to the ear on each side, about the point where the egg-shaped muzzle joins the rounded head.

To carve the eyes, cut a gentle arc shape pointing upward with a downward-pointing one beneath it. Then, outline the eye with a series of curved stop cuts and carefully round the eyeball.

Complete carving the riverbed rock for Otto's perch. Then, sand or burnish Otto's head and body to smooth the contours and remove tool marks.

To burnish, rub the surface with a blunt object to compress the wood fibers. Some carvers do this with a small piece of wood while others use metal. An old teaspoon makes a good burnishing tool. With this done, you're ready to paint or woodburn the fine texture of Otto's fur.

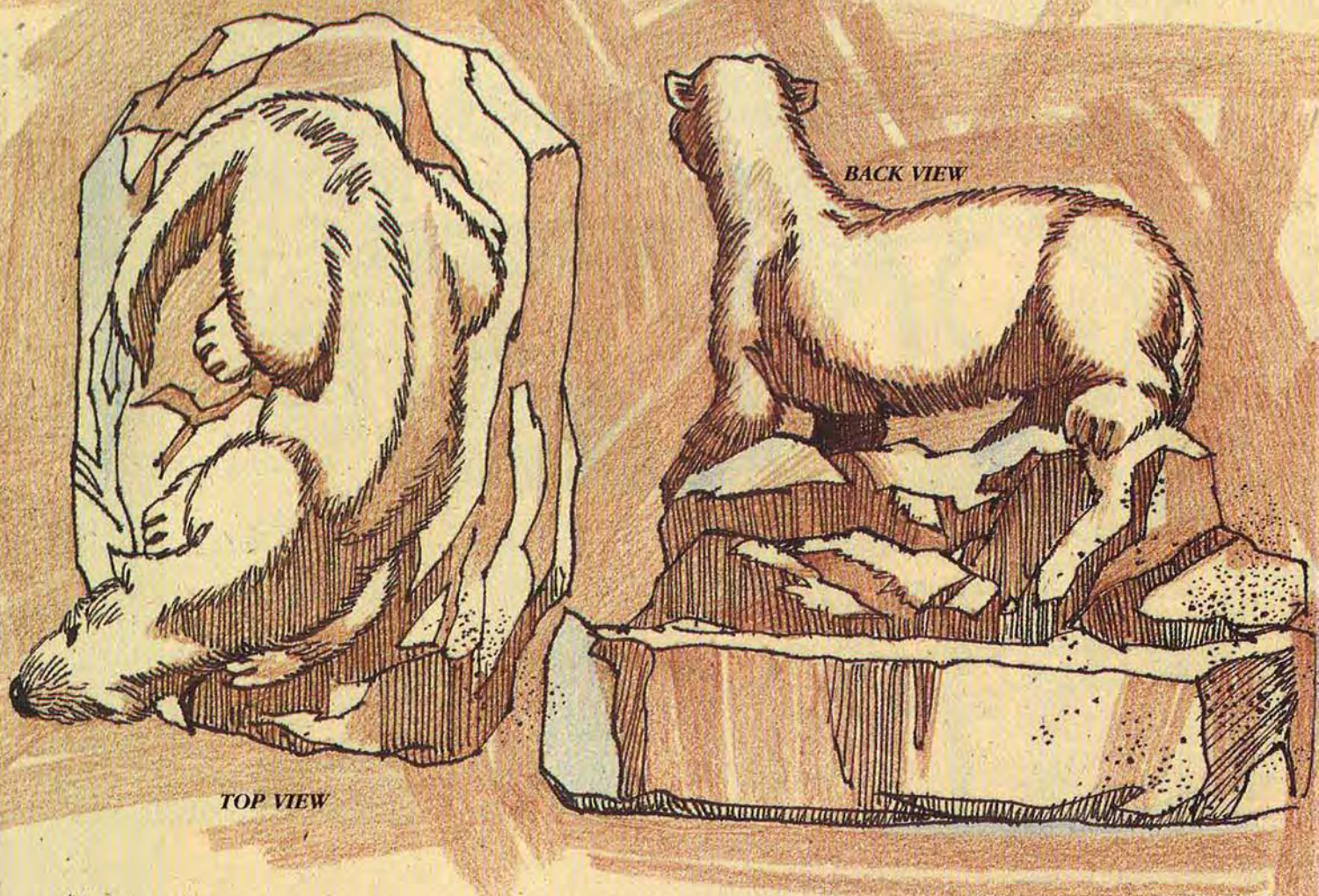
First, study the illustration *opposite page*. Notice how the hair grows, and the way it follows the contours of Otto's body.

Don't forget his fur coat

If you paint Otto's coat, seal the bare wood with tung oil or spray lacquer before you start. This prevents the paint from soaking in. Paint the fur with a fine-tipped brush, size No. 1 or smaller.

Otto looks more realistic with his fur texture woodburned, and then painted. With a fine detail point on your woodburner, burn short, curving strokes in layers.

For shiny nose and eyes, sear them with the side of a hot woodburning tip. The seared wood won't absorb tung oil (applied later), and will look shiny. You also could paint the nose and eyes



with flat black paint, and then apply gloss varnish, clear fingernail polish, or clear epoxy over them.

Give Otto some color

Study the color photos and refer to the Finishing Materials and Paint Colors listings, *right*, before you begin painting your carving.

Thin your paint. Make it watery, almost a wash, so the pigment doesn't fill in the woodburning marks or carved details.

Start with light colors and work toward darker shades, blending color changes to avoid harsh lines or a zebra effect. To build color, put on several thin coats.

Allow the paint to dry, and then dry-brush Otto with a mixture of white and brown paint. As the technique's name suggests, you start with a dry brush. You'll get better results if your paint is a little thicker, too.

Dip the brush into the paint lightly. Better yet, pat the paint surface with the brush just enough to pick up a hint of color on the bristles. Then, brush your carving with light, quick strokes. Your best strokes will be the ones where you darn near miss Otto altogether with the brush.

You're not trying to put another layer of paint on Otto when you're dry-brushing. Rather, aim to put on the slightest amount of color as a frosty-looking highlight.

Mix some shades of gray for Otto's rock, and paint the base with browns and golds to represent a streambed. Dry-brush the rock and streambed with a light gray.

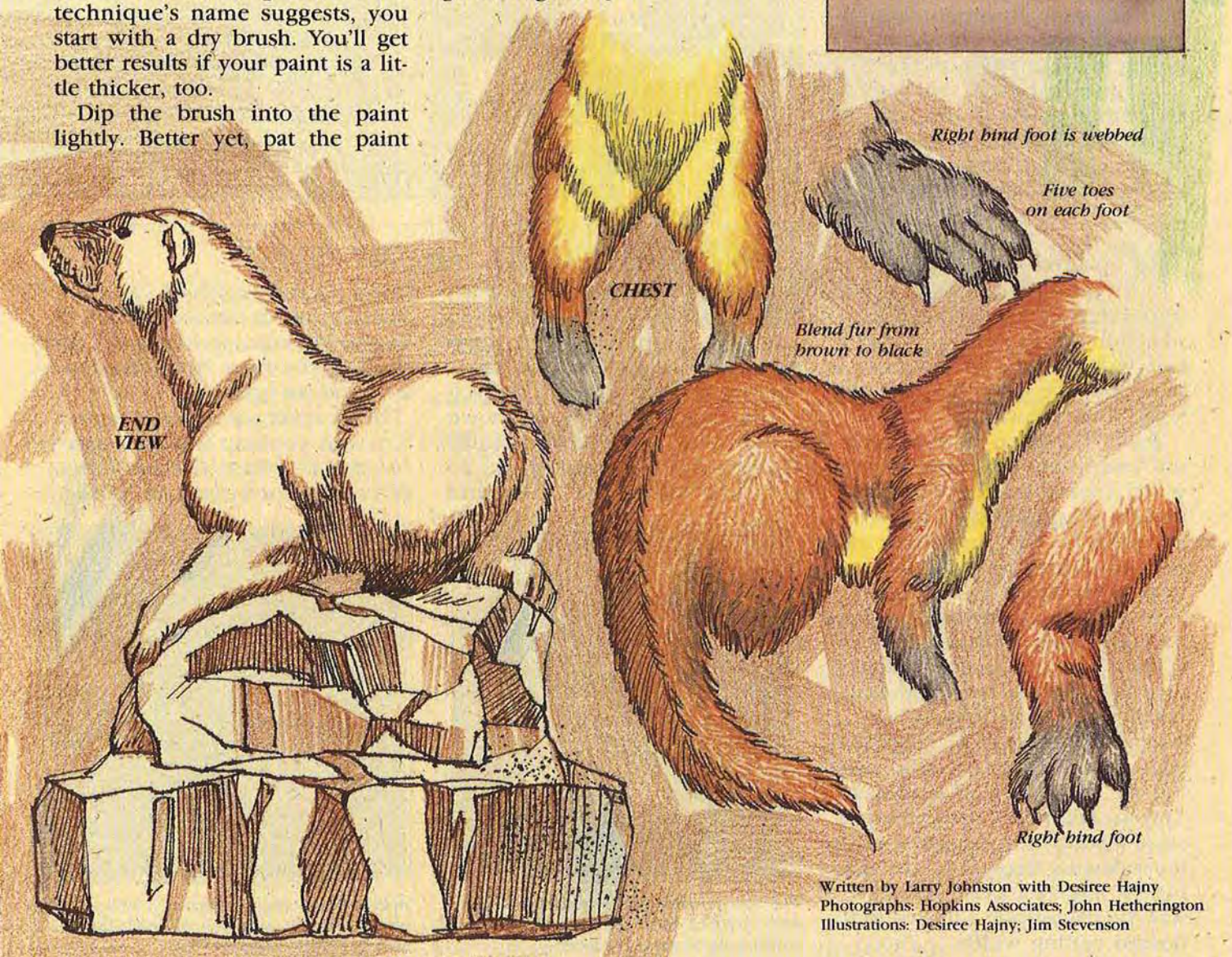
Inspect your work, and then sign and date it on the bottom. Finally, coat your carving with low-gloss tung oil.

Finishing Materials

- acrylic artist's colors in parchment, dull white, bright white, black, dark brown, and gold
- sable or camel-hair brushes, sizes 00, 0, 1, and 3
- low-gloss tung oil

Paint Colors

Spots on muzzle, nose, eyes—black
Feet—brown-black (add black to dark brown)
Belly, chin, chest, lower muzzle, neck—buff (add white to brown or parchment)
Ears—brown
Back, top of head, nose, tail—varied brown shades
Rocks—varied grays
Base—gold, varied browns



Written by Larry Johnston with Desiree Hajny
Photographs: Hopkins Associates; John Hetherington
Illustrations: Desiree Hajny; Jim Stevenson

10 WINNING WAYS TO WORK WITH PLYWOOD

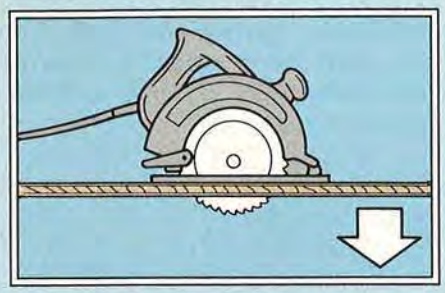
For all of its virtues—stability, strength, and good looks, to name a few—a sheet of hardwood plywood can present some real challenges to the woodworker. For example, cutting a 4×8′ sheet down to size without a lot of rigmarole, or cutting through its thin surface veneer without splintering, can be time-consuming or downright frustrating. And, how do you go about hiding those unsightly edges?

To help you deal with these and other problems peculiar to plywood, we've assembled 10 of our best tips and jigs.

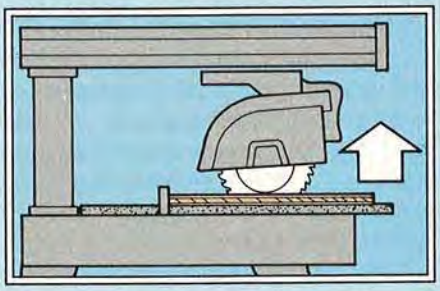
Now, bring on the plywood!

1 HOW TO SHOW YOUR GOOD SIDE WHEN CUTTING

Circular saw-blade teeth create few splinters as they enter a veneered surface, but may create a lot of chipout as they exit the workpiece. So, always position your stock as shown.



Position the best face *down* when cutting with a portable circular saw.



When using a radial-arm saw, position the plywood's best face *up*.

2 ZERO-CLEARANCE INSERTS ADD UP TO IMPRESSIVE TABLESAW RESULTS

To minimize splinters on the underside of the workpiece—something that's especially important with a dado blade—make a zero-clearance insert for your tablesaw. Here's how:

Trace the shape of your tablesaw insert onto a piece of ½" plywood (some smaller saws may require ¼" plywood or tempered hardboard). Cut just along the outside of this line, and then sand back to the line.

To cut the zero-clearance slot in the insert, you first have to install a blade that's at least 1" smaller than the largest blade that the saw handles (9" blade in a 10" saw). The outside blades of a stackable dado set work well if you're making the insert for a ⅛"-kerf blade. This is necessary because fully sized blades will interfere with the following steps. If you're making the insert for a dado blade, install the dado blade adjusted to its desired cutting width.

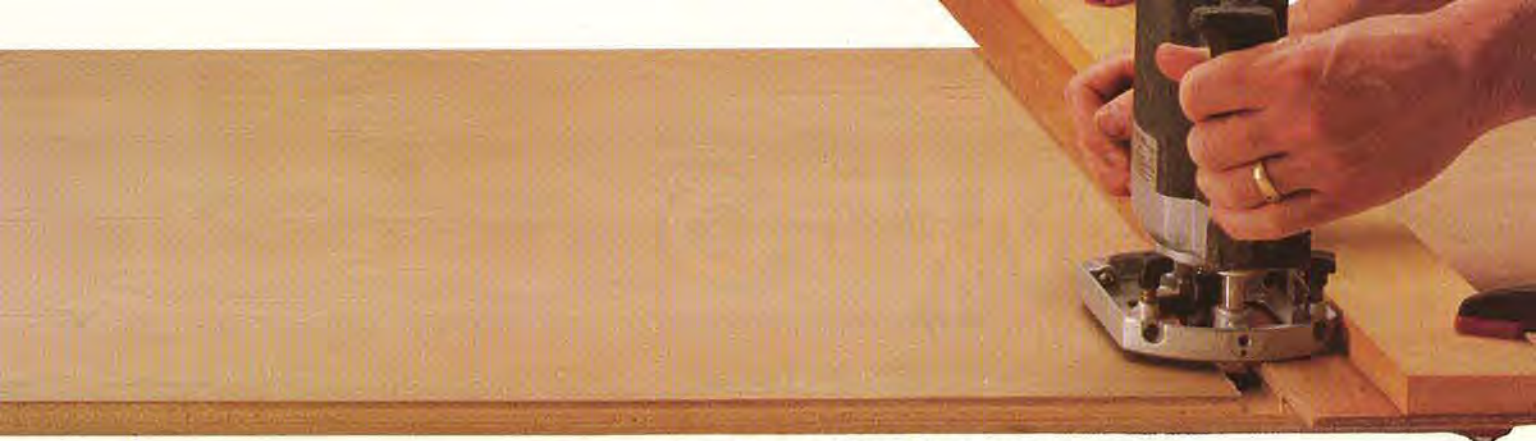
With the saw blade fully lowered, check the fit of the plywood insert. To set the top of the insert flush with the tablesaw top, apply dabs of hotmelt adhesive to each of the insert supports as shown *below*. Allow these dabs to harden slightly (5–10 seconds should do it), then install the insert and push it down flush with a straightedge as shown *below*. If the insert sinks too low, just pop it off, apply more hotmelt adhesive, and try again.

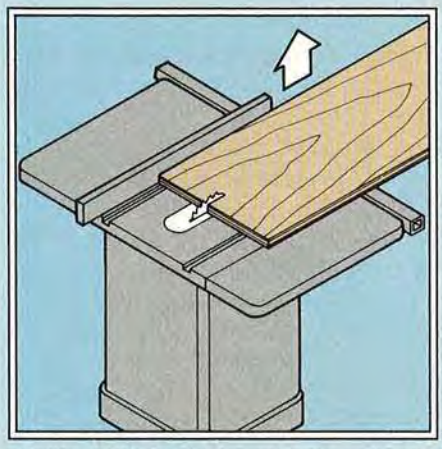
Now, cover a portion of the insert with your rip fence. *Be careful not to place the rip fence directly above the saw blade.*

For best results, allow the hotmelt adhesive to cool for 10–15 seconds before putting the insert in place.

Before the hotmelt adhesive cools completely, set the insert flush with the tabletop using a straightedge.

Print this article





Position the best face *up* when cutting plywood with a tablesaw.

Slowly raise the blade through the insert as shown *below*. With the blade slot cut, remove the insert and replace the smaller blade with a larger one if necessary.

In the *WOOD*® magazine shop, we make several insert blanks at once so we have one handy whenever we change blades.

Hold down the insert with your rip fence and slowly raise the blade. *Be careful not to cut into the rip fence!*

3 A HASSLE-FREE WAY TO CROSSCUT LONG STOCK ON YOUR TABLESAW

Crosscutting a long piece of plywood on a tablesaw can be a dangerous—if not impossible—proposition. It doesn't have to be.

Clamp a straightedge onto the bottom of your workpiece and guide the straightedge along the edge of the tablesaw extension as shown *below*. If the extension casting has a rough edge, or protruding bolts, you'll have to add a wooden strip to it for the straightedge to glide against. If you add such a strip, make it the necessary thickness so the blade-to-straightedge distance is a round number.

A straightedge clamped to the bottom side of your workpiece helps you crosscut long panels quickly, easily, and accurately.

4 TWO WAYS TO GAIN THE UPPER HAND ON GLUE SQUEEZE-OUT

Glue squeeze-out can do a real number on your finish if allowed to seal the surface of the wood. Unfortunately, these blemishes usually only reveal themselves after you apply a finish. We use two substances—oil and masking tape—to block squeeze-out from coming in contact with the wood.

As shown at the top of *page 47*, you should first apply the masking tape to surfaces adjoining the dado. Then, dry-fit the mating piece into the dado, and apply tape to the exposed surfaces of this piece. Separate the two pieces, apply glue, clamp, and allow the squeeze-out to form a tough skin before gently peeling away the tape.

Masking tape may not stick to all woods, so we occasionally use Watco natural oil as shown at the top of *page 49*. First, dry-fit the adjoining pieces, wipe oil where the squeeze-out will occur, separate the pieces, and glue them together. With a sharp chisel, carefully shave away the glue squeeze-out after a tough skin forms.

Before using this method, test the oil's compatibility with the finish you will apply over it. The oil will blend nicely with most stains, but may discolor a clear-finished piece.

Continued

10 WINNING WAYS TO WORK WITH PLYWOOD

5 HOW TO CUT PLYWOOD WITH A PORTABLE CIRCULAR SAW OR ROUTER

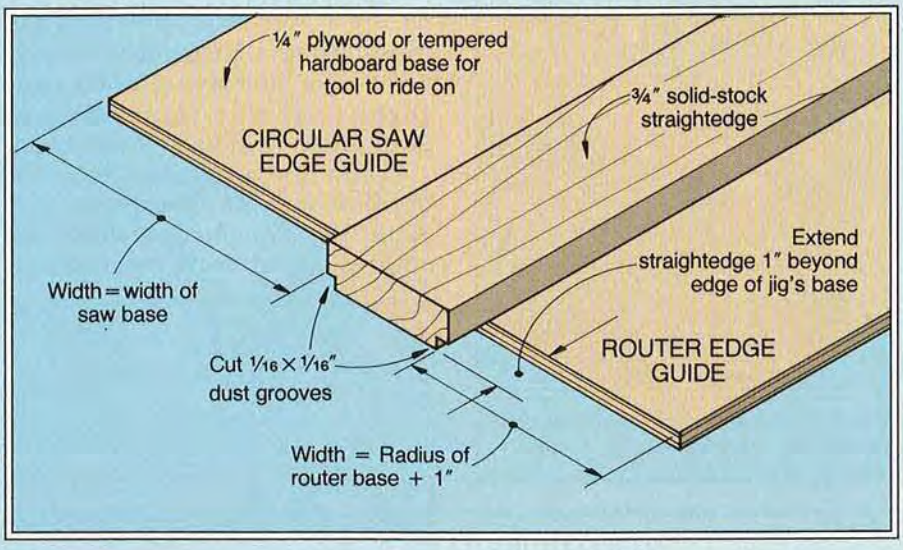
Many of us don't have tablesaws or workshops large enough for ripping full sheets of plywood. What we need: a system for getting good results with portable tools. You can use a router for smooth cross-grain cuts, or a portable circular saw for fast ripping. The edge guide shown at *right* accommodates both tools. (You can make the guide for use with just one tool, as we did with the guide shown at the top of *page 45* and in the photo at *bottom right*).

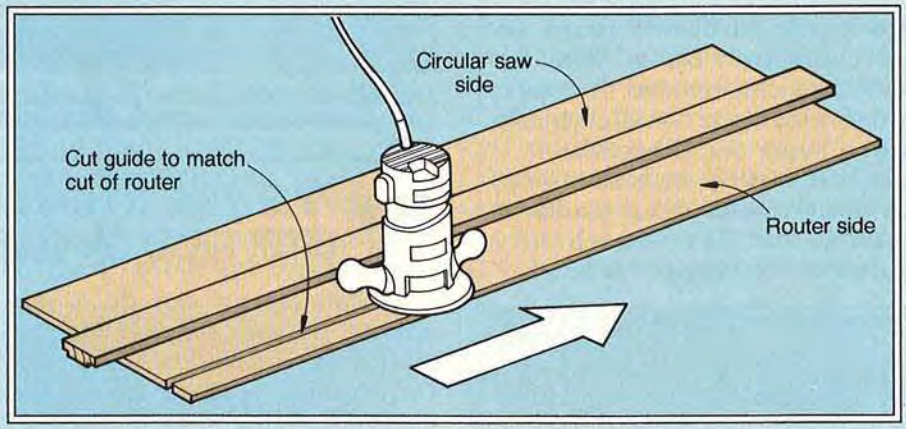
Make the ¼" base wide enough so you can trim one side to width with your router as shown in the drawing at *right middle* and the other side with your saw. This way, the router bit or saw blade trims the ¼" base so you can align this edge with the marks on your workpiece for quick, precise results. We made our edge guide 8' long so it handles almost any plywood job.

You must use the same saw and blade, and the same router and bit, with the guide at all times, so it helps to write the make and size of these tools on each side of the guide. Otherwise, the edges of the guides will not align with your cutoff marks as required in the the following step.

To make a cut, line up either of the trimmed base edges with your cutoff marks, clamp the edge guide in place, and cut away. As shown in the photo at *right*, we prefer to support the workpiece on top of several 2×2s resting on top of sawhorses.

Use several 2×2s to make an inexpensive support that prevents you from cutting into your sawhorses.

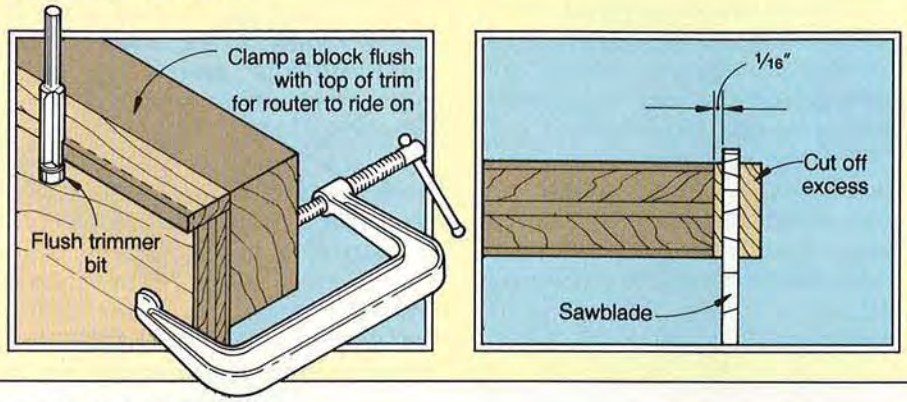

¼" plywood or tempered hardboard base for tool to ride on
¾" solid-stock straightedge
CIRCULAR SAW EDGE GUIDE
Extend straightedge 1" beyond edge of jig's base
Width = width of saw base
Cut 1/16 × 1/16" dust grooves
ROUTER EDGE GUIDE
Width = Radius of router base + 1"



6 HOW TO GET THE EDGE ON PLYWOOD

Plywood components such as shelves require edging of some sort, and we prefer solid wood over edge banding because of its durability and natural look.

First, glue a ¼"-thick strip of wood onto the edge and trim it as shown at *right*. If you want the edge to look as inconspicuous as possible, trim it to 1/16" thickness as shown at *far right*.



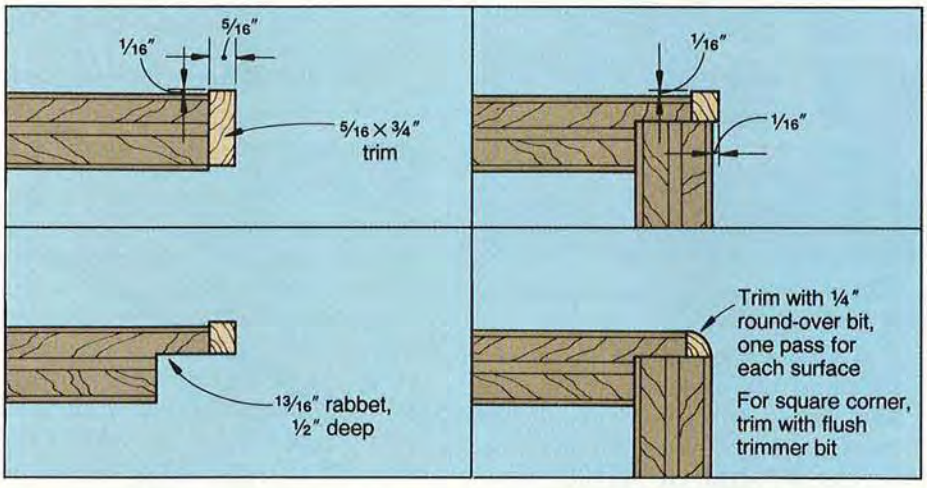
7 GETTING CORNERED WAS NEVER EASIER

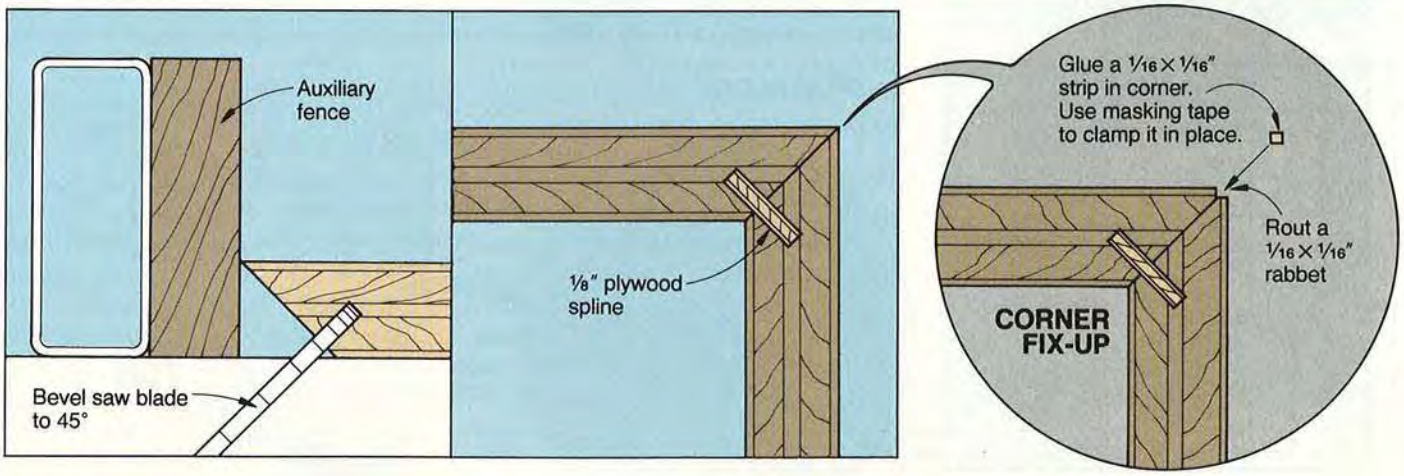
Like edges, plywood corners need disguising. Here's how to handle rabbeted and mitered corners.

For rabbeted corners, glue a 5/16"-thick trim piece onto the edge of one of the workpieces, and follow the sequence at *right*.

When faced with a mitered corner, we insert a ⅛" spline for increased strength as shown *below left* and *middle*. If the corner doesn't align perfectly, add a 1/16 × 1/16" strip as shown in the Detail drawing *below right*. Sand the strip smooth with the surface.

Continued



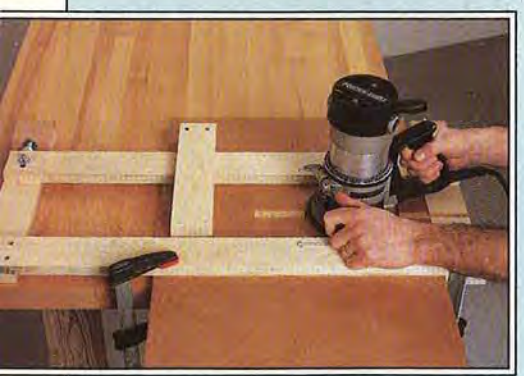

Auxiliary fence
Bevel saw blade to 45°
⅛" plywood spline
Glue a 1/16 × 1/16" strip in corner. Use masking tape to clamp it in place.
Rout a 1/16 × 1/16" rabbet
CORNER FIX-UP

10 WINNING WAYS TO WORK WITH PLYWOOD

8 TO CUT DADOES WITH A ROUTER, YOU NEED THIS JIG

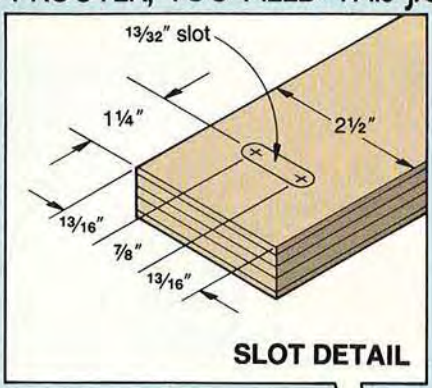
Routers equipped with straight or spiral bits cut clean dadoes but have one drawback: you can't adjust the bit for different cutting widths. Until now.

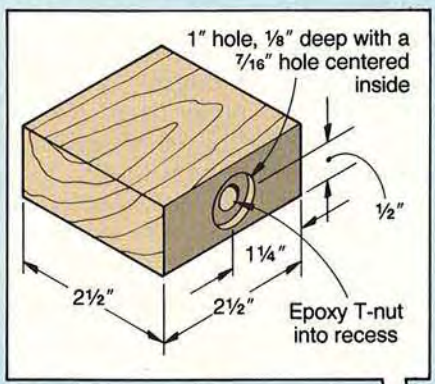
With the jig shown *below*, your router, and a single straight bit, you can cut dadoes in widths that range from your bit's width to twice your bit's width. For example, with a ½" bit you can cut dadoes from ½" to 1" wide.

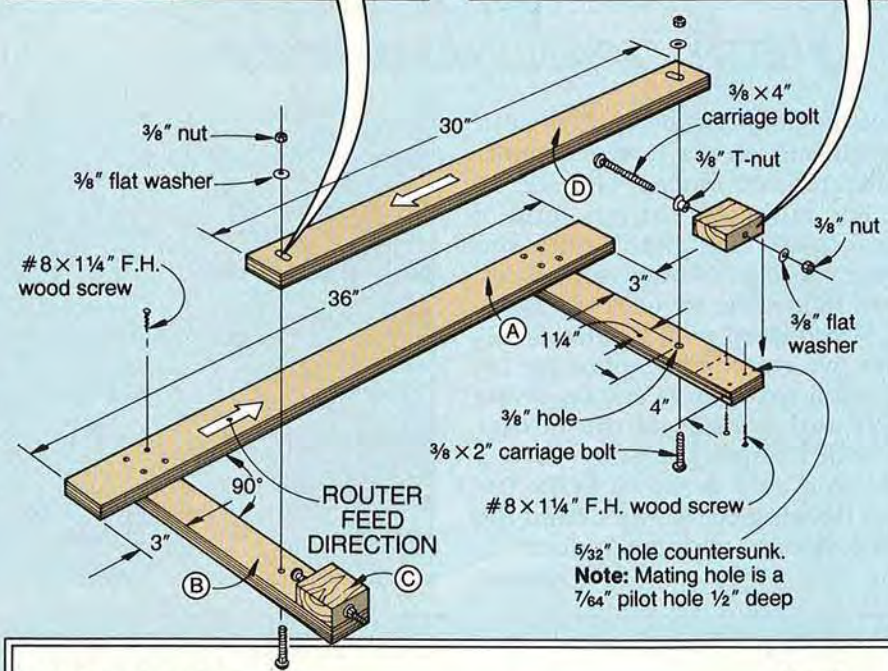


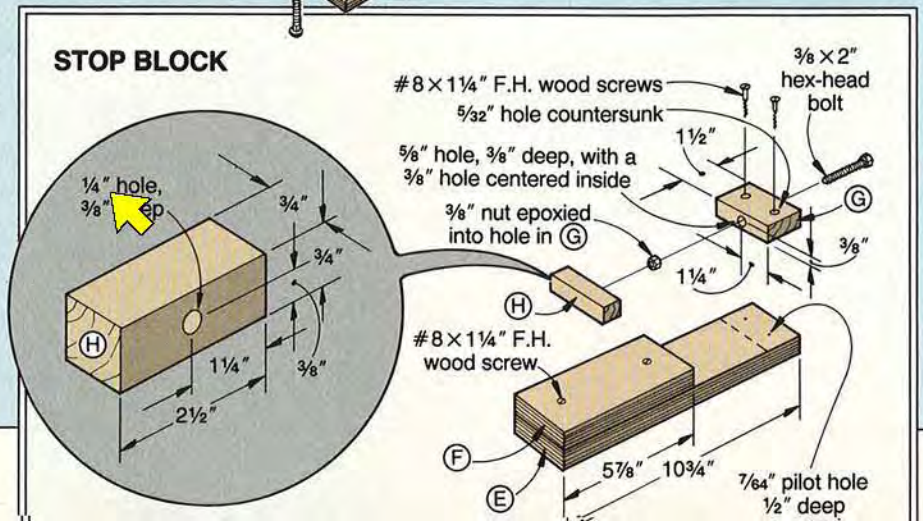
With this jig you can rout tight-fitting dadoes every time.

To build the jig, see the drawings and Bill of Materials at *right* and *below*. We sized this jig for routers with 6" bases. If your router has a larger or smaller base, you'll need to change the length









Bill of Materials

Part	Finished Size			Material	Qty.
	T	W	L		
A	¾"	2½"	36"	Plywood	1
B	¾"	2½"	14⅜"	Plywood	2
C	1 1/16"	2½"	2½"	Solid stock	2
D	¾"	2½"	30"	Plywood	1
E	¾"	2½"	10¾"	Plywood	1
F	¾"	2½"	5⅞"	Plywood	1
G	¾"	1½"	2½"	Solid stock	1
H	¾"	¾"	2½"	Solid stock	1

of parts B accordingly. The jig will handle stock up to 25" wide, but you can make parts A and D longer for larger workpieces.

To use the jig, adjust part D so it's parallel to part A and separated from part A by the width of the router base (place the router base on top of parts B to make this adjustment). Turn the carriage bolts mounted in parts C counterclockwise until they contact part D.

Now, turn the carriage bolts clockwise as many revolutions as necessary (each revolution equals 1/16") to make up the difference between the width of the straight bit and the width of dado you need. For example, if you need a 3/4" dado, and have a 1/2"-diameter straight bit in your router, back away the carriage bolts 1/4" (four revolutions). Mark the carriage-bolt head with a single dot near its rim so you can keep track of the number of revolutions. Now, lock down part D by tightening the nuts that hold it.

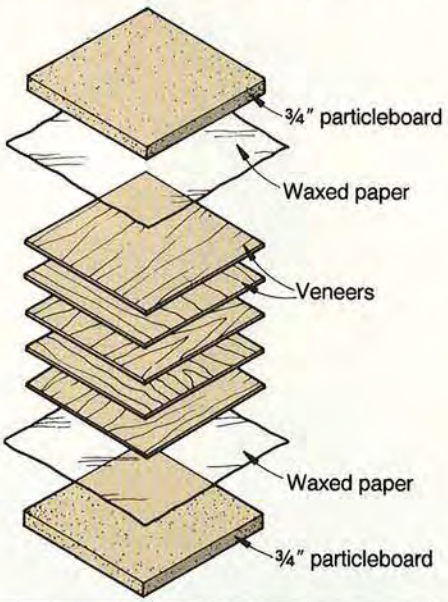
For a tight-fitting dado, test your adjustments by making some cuts in scrap stock. Clamp the jig to the scrap stock and feed the router along part A in the direction indicated by the arrows on the jig. After completing this cut, feed the router along part D in the opposite direction. As you enter and exit the cuts, the bit will also cut dadoes in parts B. This won't harm the jig, so long as you don't make cuts deeper than 3/8". If you make a deep cut, replace parts B.

To cut stopped dadoes as we're doing in the photo *opposite page*, just secure the stop block in place by turning its hex-head bolt.

9 THIN PIECES WITH STRENGTH AND GOOD LOOKS

Some workpieces—such as fine toy parts or scrollsawed ornaments—have to be thin (1/4" or less) *and* strong. The problem: Solid stock won't hold up, and you might not be able to find plywoods in the necessary thickness or species. Even if you can find the right plywood, it's likely to have an inner ply of a contrasting wood. Yuck!

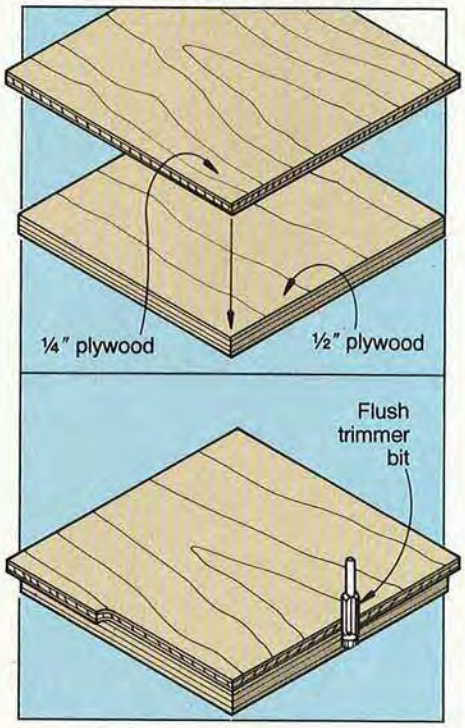
The solution: Cross-laminate several layers of veneer of the same species as shown at *right*. Apply an even layer of white woodworker's glue between the veneers and secure the sandwich with clamps. After drying overnight, your homemade stock will have strength *and* good looks.



10 HOMEMADE PLYWOOD LOOKS GREAT ON CABINETRY

The next time you need 3/4" plywood with only one good hardwood face, consider laminating 1/4"-thick hardwood plywood to a substrate of fir plywood or particleboard. Why? The cost of these materials (plus the necessary glue) usually amounts to less than the cost of a sheet of 3/4" hardwood plywood of the same square footage. And, in our trips to lumber outlets, we've often found 1/4" plywood (especially oak) that looks far better than what's available in 3/4" plywood of the same species.

As shown at *right*, you can make your own plywood by laminating a slightly oversized sheet of 1/4" plywood to a substrate (contact adhesive or woodworker's glue will do it). Then, straighten the edges with a flush trimmer bit in your router.



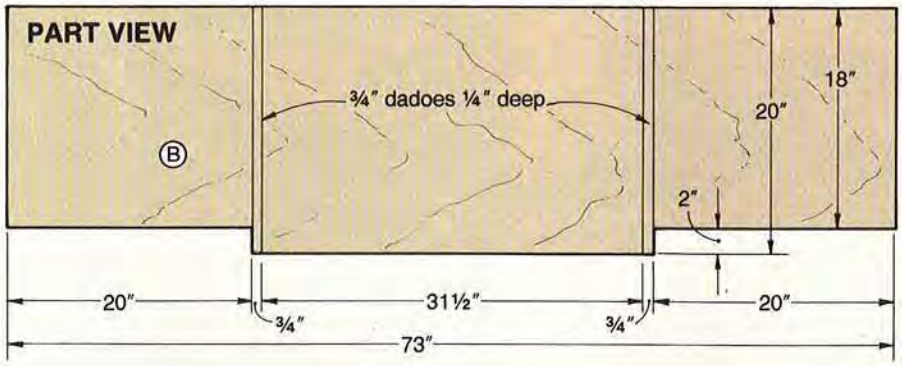
Written by Bill Krier with Jim Boelling and Jim Downing
Illustrations: Kim Downing, Mike Henry Photographs: John Hetherington, Hopkins Associates

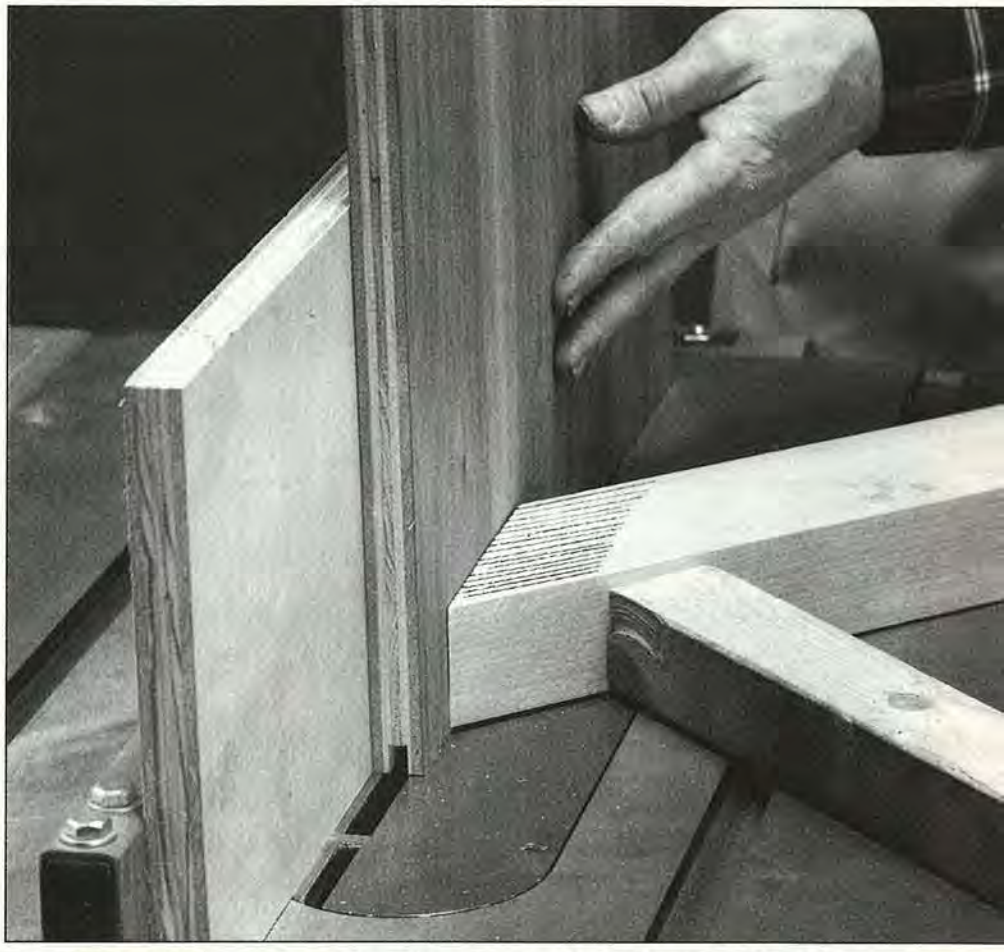
ALL-STAR

MEDIA CENTER

NOW *THAT'S* ENTERTAINMENT!

Family room clutter got you down? Here's one great looking solution. Corral all your home electronics gear into our full-service walnut entertainment center, which allows ample room for a videocassette recorder, a 27" TV (or smaller), a sound system, and loads of tapes, discs, and related items. We've also placed the television on a lazy Susan for perfect viewing from several angles.





Cut a ¼" slot ½" deep along the top edge of each walnut plywood end panel.

Cut the parts for the basic cabinet

1 Using the sizes listed in the Bill of Materials and the Part View drawing for dimensions, cut the cabinet end panels (A), top and bottom (B), and dividers (C) to size from ¾" plywood (we used walnut). To minimize waste, follow our Cutting Diagram.

2 From solid stock, cut the end panel caps (D) to size.

3 Cut a ¼" slot ½" deep along the top edge of each end panel and the bottom edge of each panel cap where shown in the Spline detail accompanying the Basic Cabinet drawing. (As shown at *right*, we did this on a tablesaw fitted with a tall auxiliary fence. We also used a feather board to keep the panel firmly against the auxiliary fence.)

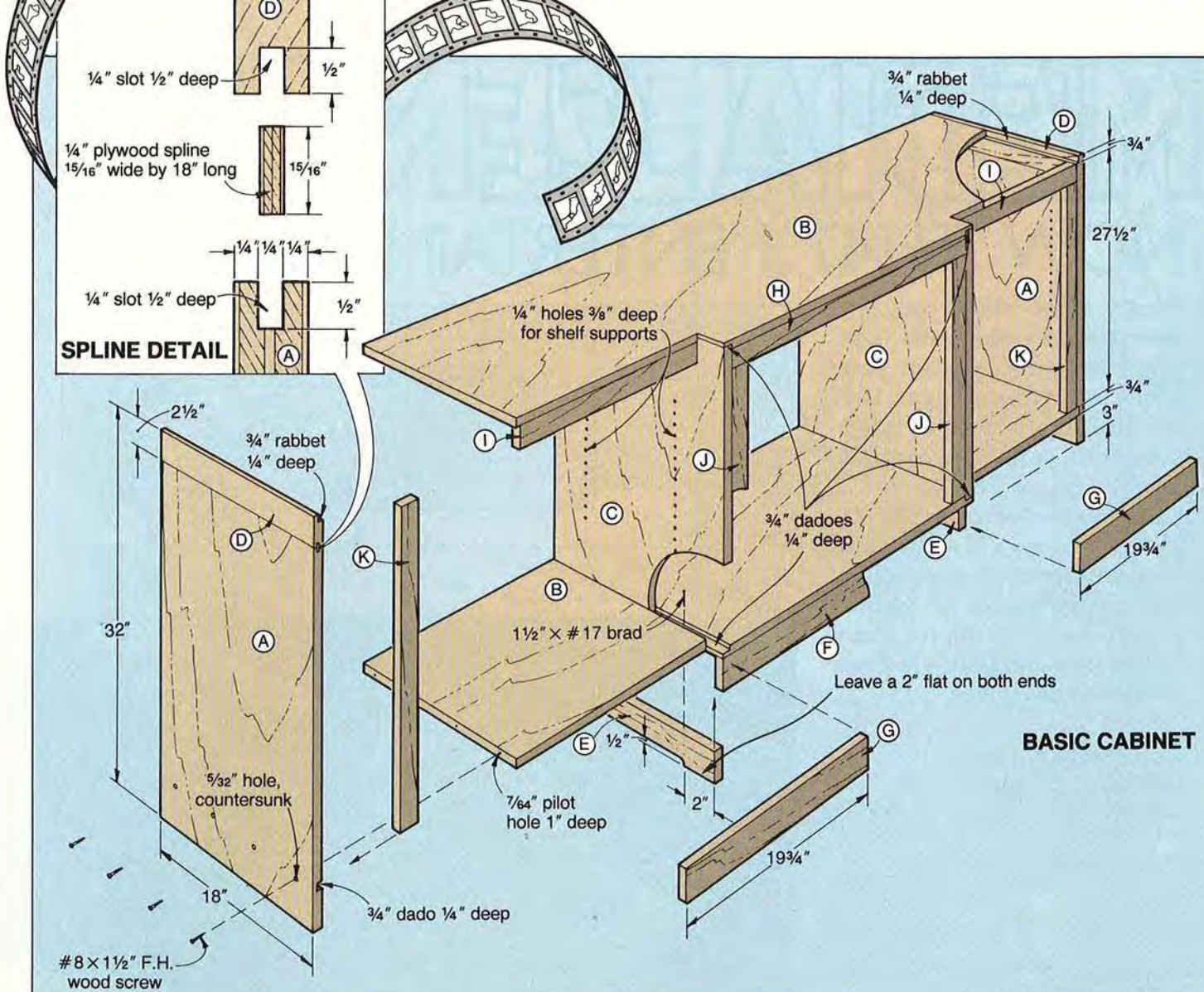
4 From ¼" stock (we used plywood), cut a pair of 15/16×18"-long splines. Apply glue, insert the splines in the panel slots, and add the slotted panel caps. Align the panel cap ends with the end panels and clamp.

5 Mark the locations, and cut or rout the dadoes and rabbets in the basic cabinet parts (A/D, B) where shown on the Basic Cabinet drawing. To keep the best grain visible (best side of the plywood), cut the dadoes in the surface opposite the face side. For the bottom piece (B), cut the dadoes in the face side.

6 Cut the cabinet support pieces (E, F, G) to size from ¾" walnut plywood. Mark the layout, and cut a notch along the bottom of each part E where shown on the Basic Cabinet drawing.

Continued

Print this article



Bill of Materials

Part	Finished Size* T	W	L	Material	Qty.
BASIC CABINET COMPONENTS					
A	¾"	18"	29½"	WP	2
B	¾"	20"	73"	WP	2
C	¾"	20"	28"	WP	2
D	¾"	2½"	18"	W	2
E	¾"	3"	19¼"	WP	2
F	¾"	3"	33"	WP	1
G	¾"	3"	19¾"	WP	2
TRIM SUPPORT PIECES					
H	¾"	1¾"	31½"	W	1
I	¾"	1¾"	19¾"	W	2
J	¾"	1½"	25¾"	W	2
K	¾"	1¼"	25¾"	W	2

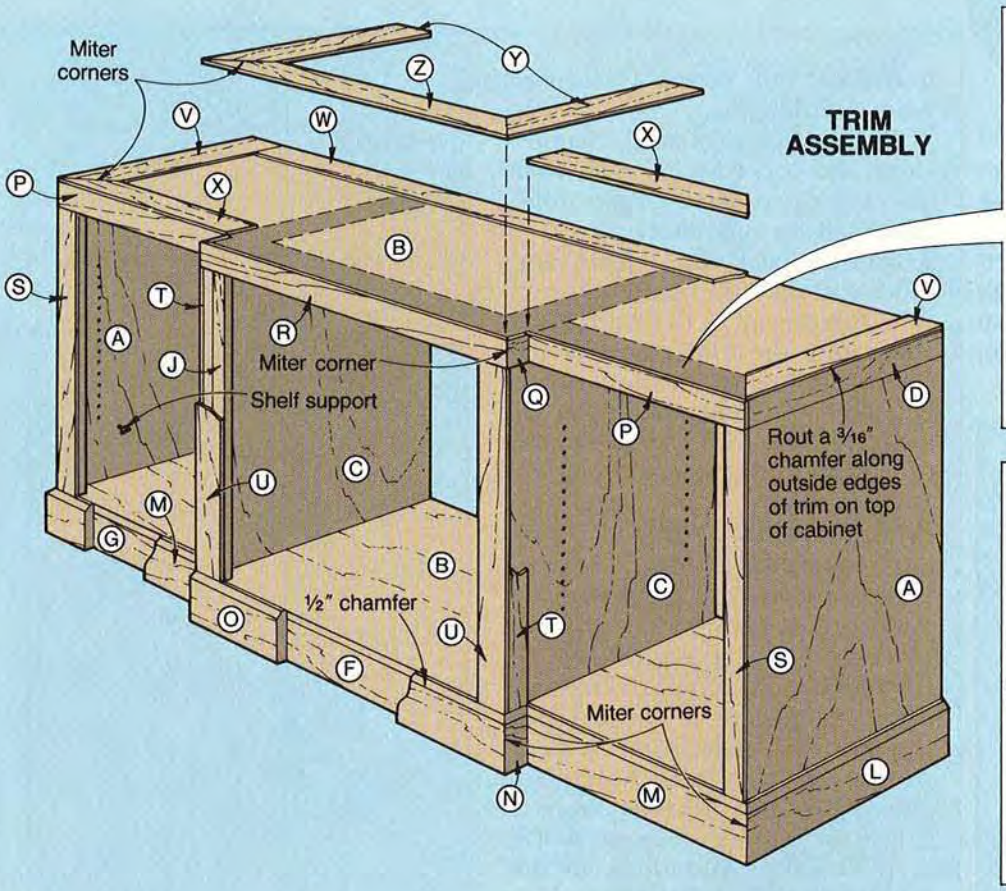
Part	Finished Size* T	W	L	Material	Qty.
BASE MOLDING PIECES					
L*	¾"	3¾"	18¾"	W	2
M*	¾"	3¾"	21¼"	W	2
N*	¾"	3¾"	2¾"	W	2
O*	¾"	3¾"	34½"	W	1
FRONT AND SIDE TRIM					
P	¼"	2½"	20½"	W	2
Q	¼"	2½"	2"	W	2
R	¼"	2½"	33½"	W	1
S	¼"	2"	25¾"	W	2
T	¼"	1¾"	25¾"	W	2
U	¼"	2½"	25¾"	W	2

Part	Finished Size* T	W	L	Material	Qty.
TOP TRIM					
V	¼"	2½"	18¼"	W	2
W	¼"	2½"	69"	W	1
X	¼"	2½"	20¼"	W	2
Y	¼"	2½"	17¾"	W	2
Z	¼"	2½"	33½"	W	1
SHELVES AND BACKS					
AA	¾"	15"	19⅝"	WP	4
BB	¾"	¾"	19⅝"	W	4
CC	¼"	20½"	28¼"	WP	2
TURNTABLE SHELF					
DD	¾"	12"	24"	WP	2
EE	¾"	1¾"	24"	W	1

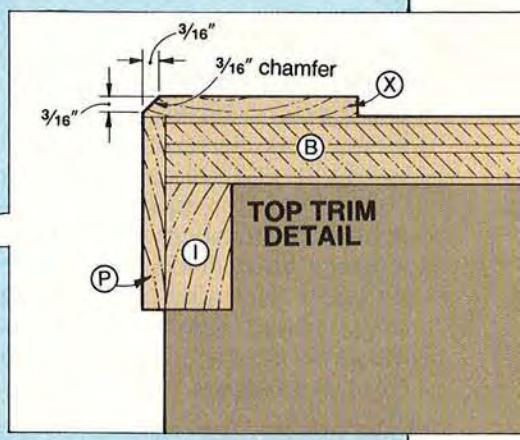
*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

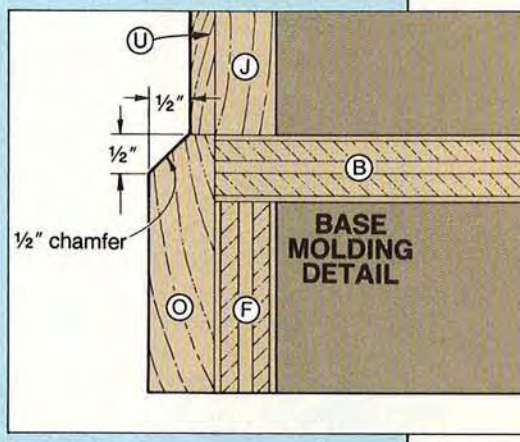
Material Key: WP—walnut plywood, W-walnut.

Supplies: 1½" × 17 brads, #6 × ¾" flathead wood screws, #8 × 1½" flathead wood screws, shelf supports, finish.

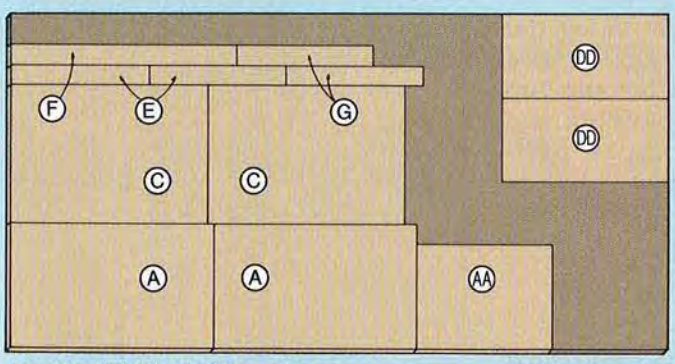


TRIM ASSEMBLY

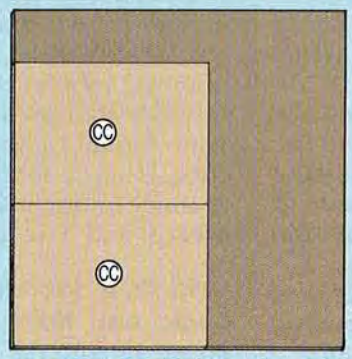




Cutting Diagram

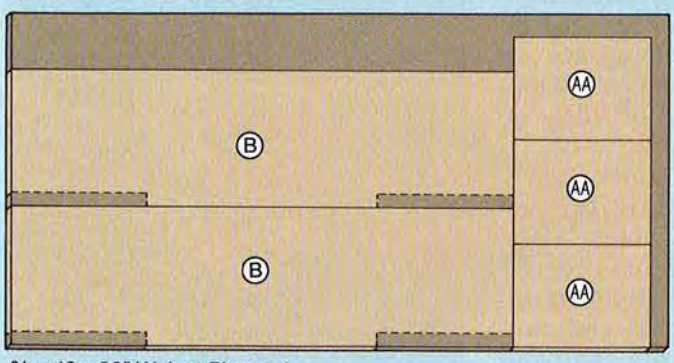


¾ × 48 × 96" Walnut Plywood

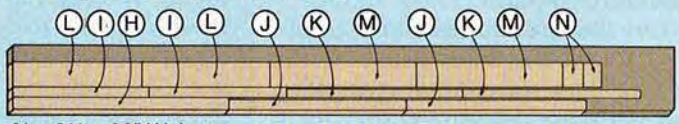


*Resaw or plane to ¼" thick

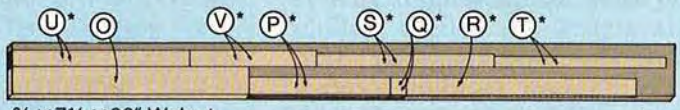
¼ × 48 × 48" Walnut Plywood



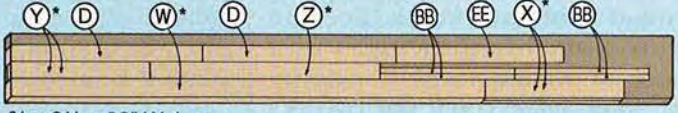
¾ × 48 × 96"-Walnut Plywood



¾ × 9¼ × 96" Walnut



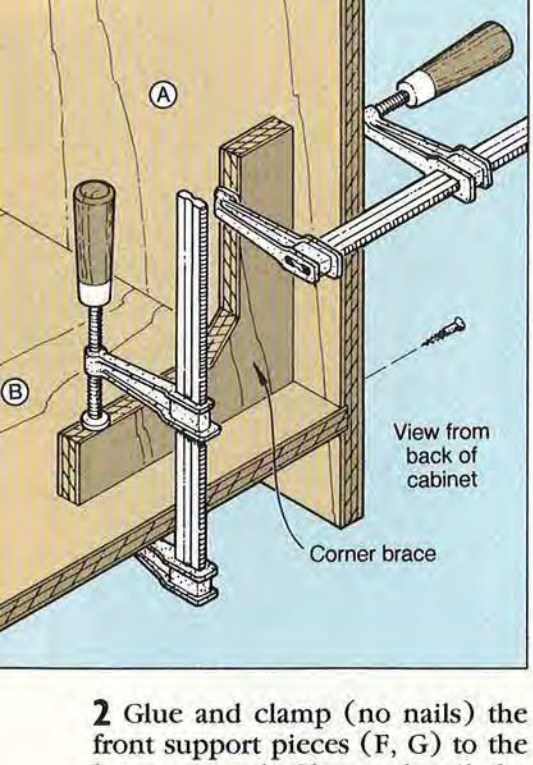
¾ × 7¼ × 96" Walnut



¾ × 9¼ × 96" Walnut

Now, let's assemble the basic cabinet

1 Glue and clamp the end panel assemblies (A/D) to the bottom (B). Check for square, and use corner braces where shown in the drawing *below*. Drill and countersink four mounting holes through each cabinet side (A) and into the ends of the cabinet bottom. Drive the screws.



2 Glue and clamp (no nails) the front support pieces (F, G) to the bottom panel. Glue and nail the supports (E) to the bottom side of the bottom (B) directly under the ¾" dadoes.

3 Glue and clamp the dividers (C) and top (B) to the assembly. Check for square.

4 Cut the trim support pieces (H, I, J, K) to the sizes listed in the Bill of Materials. (Before cutting the parts, we measured the opening to verify the lengths.)

Add the base molding

1 Cut the base molding pieces (L, M) to width and to length plus 2" from ¾" walnut stock. See the Trim Assembly drawing. Cut a piece of walnut to 3¾" wide by 12" long; later, you'll cut two N's from this piece. Next, cut the front base trim piece (O) to size plus 2" in length.

2 Rout or bevel-rip a ½" chamfer along the top edge of each base molding piece. See the Base Molding detail for reference.

3 Trim the back edge square, and miter-cut the front end of each side trim piece (L) to length. Glue and clamp the trim pieces to the base. Continue to measure, miter-cut, and glue and clamp the remaining base trim pieces (M, N, O) to the cabinet assembly.

Add the front, side, and top trim pieces

1 From ¼"-thick walnut (we resawed thicker stock), cut and miter-cut the front trim pieces (P, Q, R) to size and length. Glue and clamp the pieces to the front of the cabinet assembly where shown on the Trim Assembly drawing on the previous page.

2 Cut the vertical trim pieces (S, T, U) to size. Add them to the cabinet, and sand smooth.

3 Cut the top trim pieces (V, W, X, Y, Z) to size. Glue and clamp them to the top of the cabinet, and sand smooth.

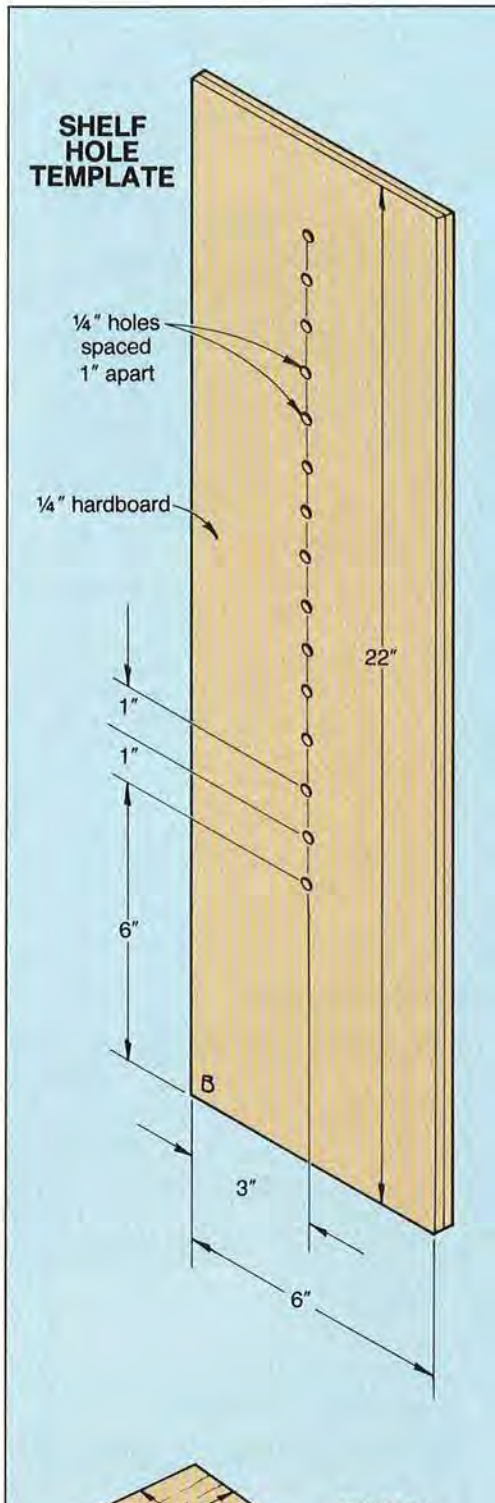
4 Rout a 3/16" chamfer along the front and side edges of the trimmed cabinet top. See the Top Trim detail accompanying the Trim Assembly drawing for reference. Using a sharp chisel, form a chamfer on the inside edge where parts X and Y meet.

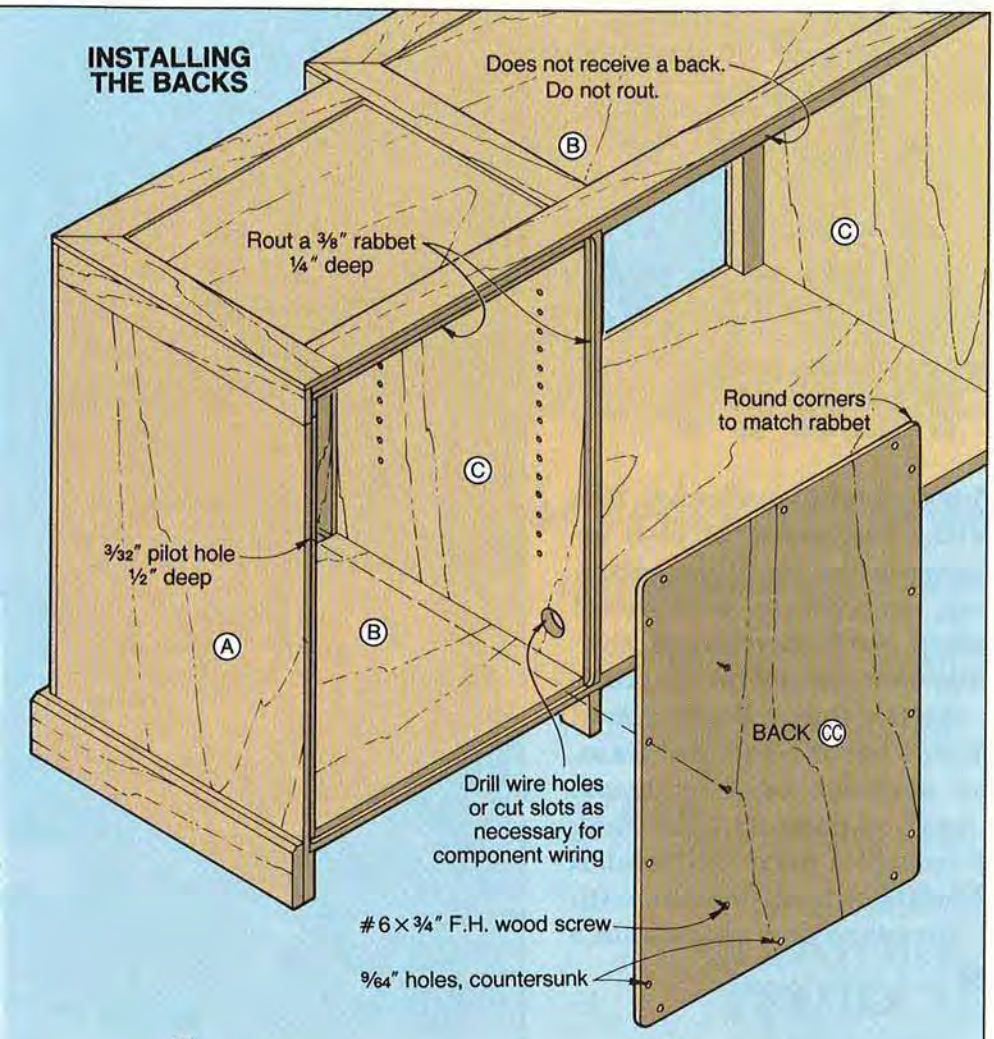
And now for the shelves, back, and finish

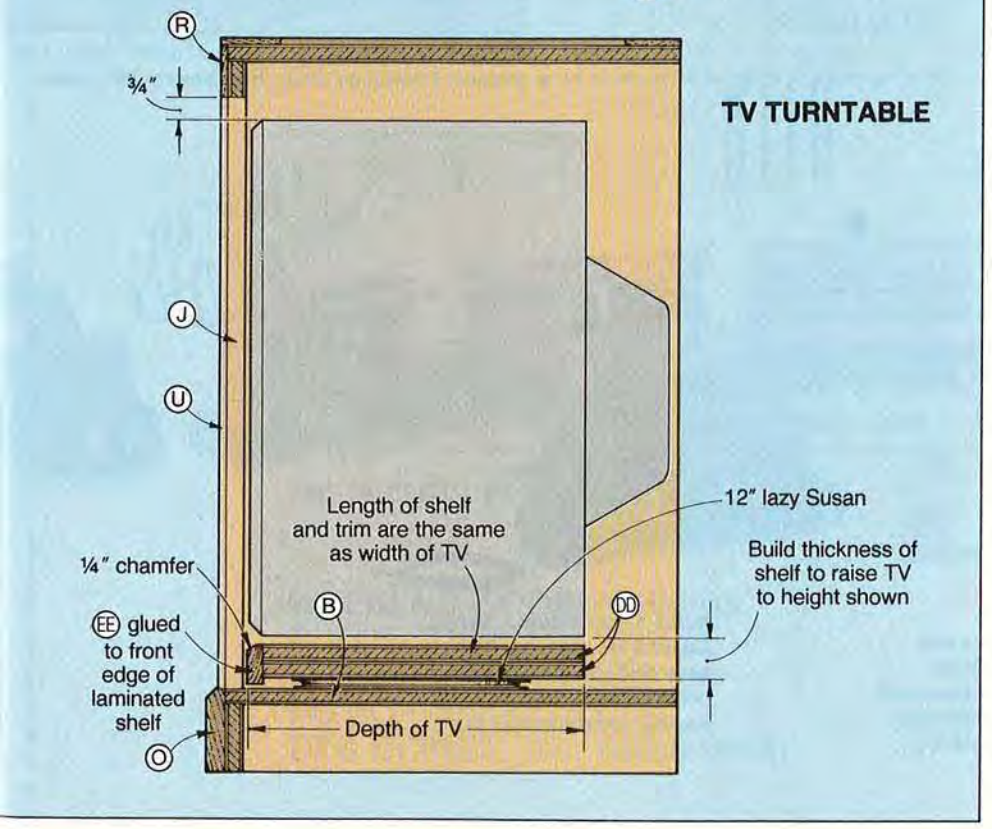
1 Cut the shelves (AA) and shelf fronts (BB) to size. Glue and clamp the fronts to the shelves with the tops and ends flush.

2 Cut, rout, or sand an ⅛" chamfer along the top front edge of each walnut shelf front.

3 Cut a strip of stock 6×22" long. Mark a centerline, and drill ¼" holes where dimensioned on the Shelf-Hole Template drawing. Mark a B on the bottom end; this will prevent you from inadvertently flopping it end for end.







4 Using the shelf-hole template, drill the ¼" shelf-clip holes ⅜" deep. (We used a stop on the drill bit to prevent drilling through the cabinet sides.)

5 Position the cabinet facedown on a blanket. Viewing the drawing at *left*, rout a ⅜" rabbet ¼" deep around the inside edge of each of the end-cabinet openings where shown on the drawing.

6 Measure the routed openings, and cut the two back pieces (CC) to size. Round the corners of each back piece to fit the corners of the routed openings.

7 Drill access holes through the dividers for the electrical wires for your components (we used a Forstner bit). Back the plywood with scrap stock when drilling the holes to prevent chip-out.

8 Finish-sand the cabinet and shelves. Apply the finish.

Add the turntable shelf

Note: *The TV turntable shelf shown was dimensioned to fit our particular television. Determine the size you'll need by referring to instructions on the TV Turntable drawing at* left.

1 Cut the turntable shelves (DD) and front trim piece (EE) to size.

2 Glue the shelves face-to-face with the edges and ends flush. Trim or joint the front edge even, and glue the shelf front (EE) to it. Rout a ¼" chamfer along the top front edge of the shelf.

3 Sand and finish the assembled shelf. Fasten a 12" lazy Susan to the shelf and then to the cabinet bottom piece (B)—see the Buying Guide for our source.

Buying Guide

• **12" lazy Susan.** Ball-bearing system, mounting instructions included, catalog no. 77520, $8.50 ppd. ($11 U.S. funds for Canadian orders). Armor Products, Box 445, East Northport, NY 11731. Or, call 800/292-8296 to order.

Produced by Marlen Kemmet
Project Design: Gregory A. Henderson
Photographs: Hopkins Associates; John Hetherington
Illustrations: Kim Downing; Bill Zaun

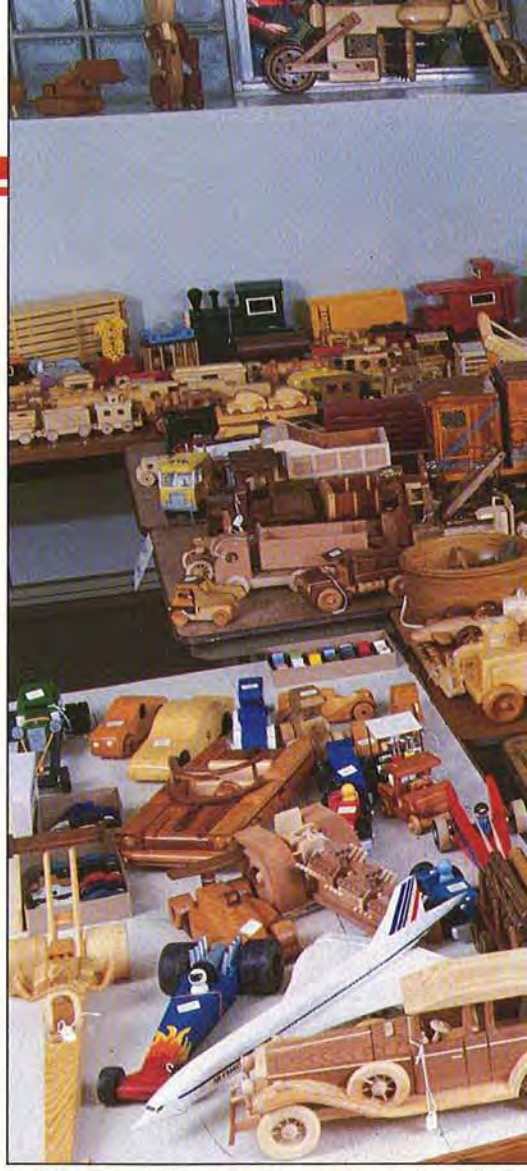
439 Entries

OH MY, WHAT A CONTEST!

Each workday preceding the entry deadline seemed like Christmas morning here at *WOOD*® magazine. As toys arrived for our third Build-A-Toy competition, we unwrapped, admired, inspected, tagged, and yes, even played with them! Thanks to you warmhearted readers, underprivileged children across the nation will have the same opportunity come the holidays. As always, the U.S. Marine Corps Reserve will distribute 1991 entries through their Toys-for-Tots program.

Showcased here are the grand- and first-prize winners. For the complete winners list, turn to page 82. (All told, about one of every eight entrants earned a prize!) Although press deadlines prevent us from sharing winning plans with you in this issue, you will find the plans for an entrant's whimsical seaplane on page 58.

Print this article



Build-A-Toy judges examined more than 400
Armor Products, East Northport, N.Y.; Barry

First prize, home hobbyist, went to *Richard Zichos,* Pasadena, Md., for his maple and walnut train.

One of last year's top winners, *Neal Seely,* Rochester, N.Y., captured first place, professional, with a puppy pull toy.

Build-A-Toy veteran *Mike Jagielo*, of Almond, Wis., snatched the grand prize, professional, with this lovable ladybug pull toy.

wooden entries. From left, Kelly Mehler, Berea, Ky., craftsman; Jim Downing, *WOOD* magazine design editor; John Capotosto, Haley, industrial arts teacher, Licking Valley High School, Newark, Ohio; Maj. W.C. Koehler Jr., USMC.

In the student division, *Josh Escobedo,* of Pioche, Nev., won the grand prize with his car transport.

Among home hobbyists, *Larry Weaver,* of Petersburg, W. Va., claimed the grand prize with his space shuttle.

A monster truck of solid padauk by *John Hicks,* Westlake Village, Calif., took student first prize.

Yes, indeed! ***WOOD*** *magazine will sponsor another Build-A-Toy contest for 1992. Look for the rules on page 84 in this issue.*

Photographs: John Hetherington

SEA SKIPPER

A TOY FOR YOUNG FLIERS TO ENJOY

In hopes of making some young child happy, David Lanford, from Pipe Creek, Texas, entered this simple beauty in our 1991 Build-A-Toy contest. We like the floatplane because you can quickly cut the pieces to shape, and then fit them together like a puzzle. We also have designated this as the *Student Special-Entry Project* in our 1992 Contest. See the complete rules on page 84.

1 Using a photocopy and spray adhesive or carbon paper, transfer the full-sized patterns on the *opposite page* to ¼" plywood. (We chose Baltic birch because it's strong, smooth, and lacks voids.)

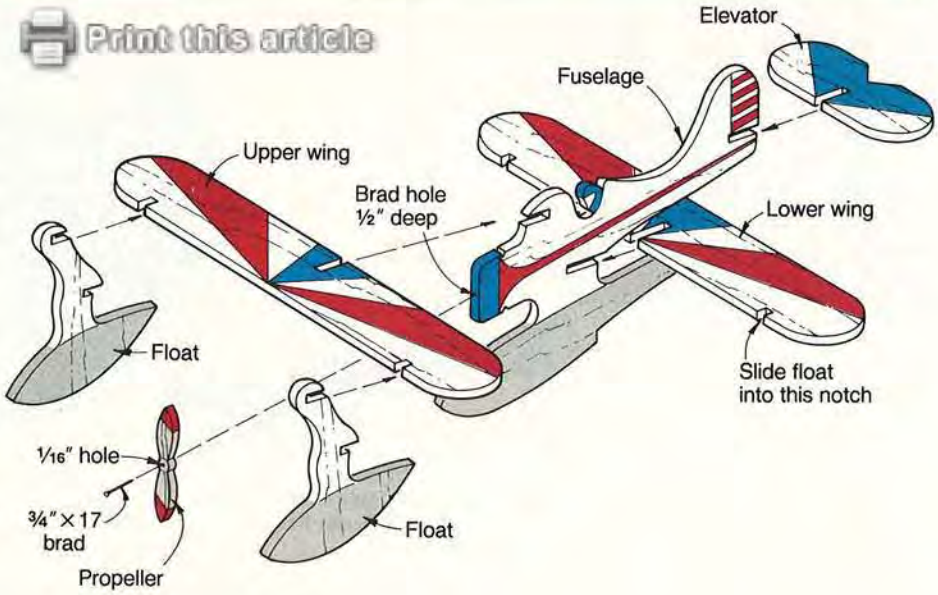
2 Check the thickness of your stock against the width of the marked notches (¼" plywood doesn't always measure exactly ¼" thick). Adjust the notch size if necessary for a snug fit, and cut the pieces to shape.

3 Drill a 1/16" hole through the center of the propeller.

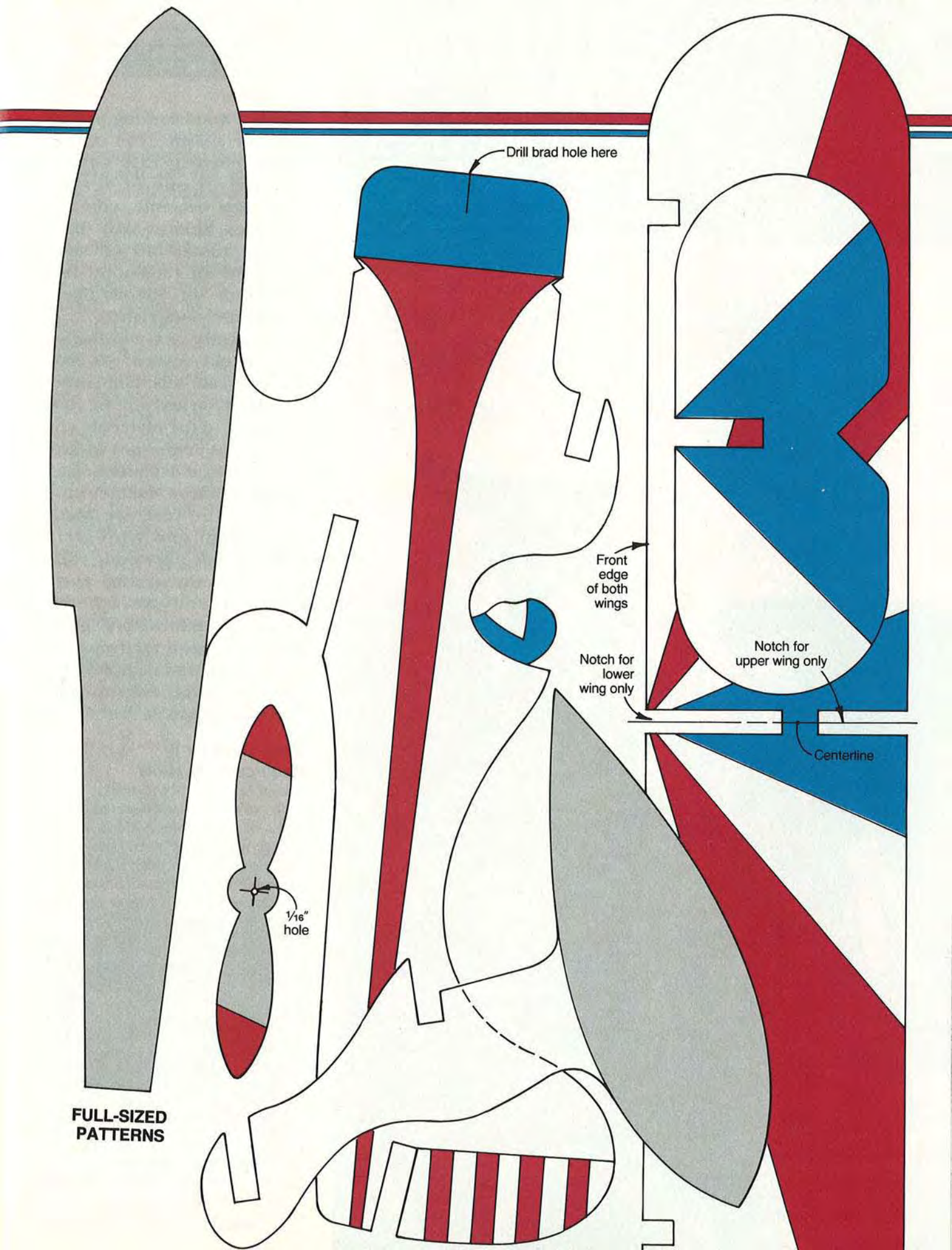
4 Sand the pieces smooth (we progressed to 220-grit sandpaper), prime the pieces, mask off the mating surfaces for a good glue joint later, and then paint as desired. (We covered the mating surfaces with masking tape, sealed the plywood with two coats of aerosol lacquer, primed the pieces with white paint, and then used enamel modeling paints for the stripes. To form the straight lines, we used masking tape and painted one color at a time.)

5 Remove the masking tape, glue the parts together, and hold the propeller brad in the fuselage with instant glue. Don't use an accelerator with the instant glue; it will dissolve some paints.

Print this article



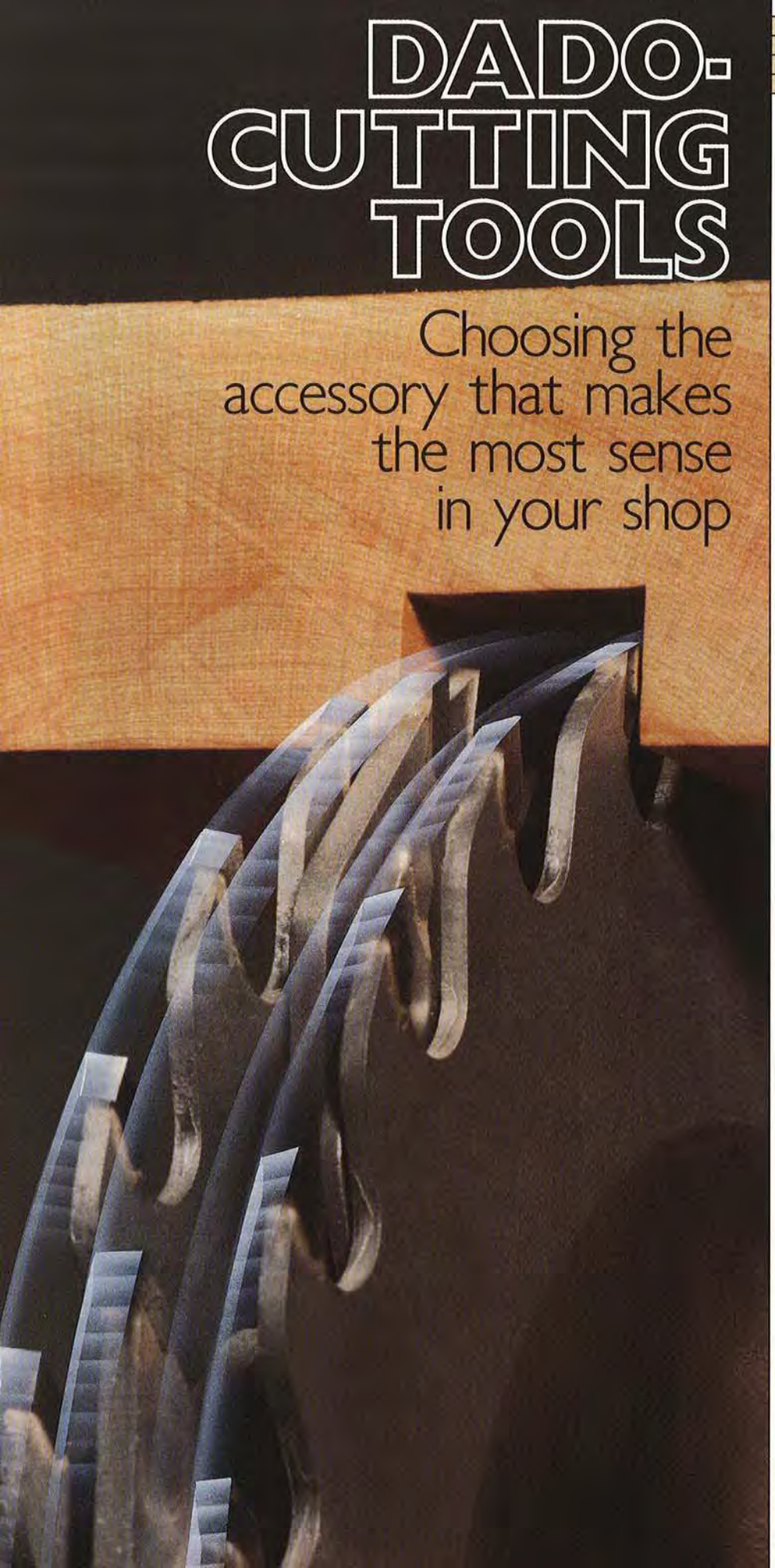
Project Design: David Lanford
Photographs: Hopkins Associates
Illustrations: Kim Downing; Bill Zaun



FULL-SIZED PATTERNS

DADO-CUTTING TOOLS

Choosing the accessory that makes the most sense in your shop



Print this article

When a woodworking project calls for a dado, you can go about cutting this square channel in one of several ways. For example, you can spend as little as $10 for a straight router bit, or more than $300 for a top-of-the-line dado-blade set. Sounds like a simple decision, right?

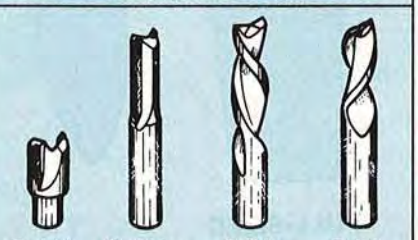
Not really. As we discovered in our tests of 30 dado blades, blade sets, and router bits, the type and size of your project, and the materials you use, are as important as cost in selecting a dado tool.

To put these dado-cutting tools to the test, we made cross-grain and with-grain cuts in oak plywood, solid oak, melamine-coated particleboard, and pine. We assigned a performance grade to every product for each type of cut, and compiled the results in the easy-to-read charts on *pages 64 and 65*.

Your options in dado-cutting tools

For this article we tested three types of dado blades/sets and four types of router bits. We found that router bits of the same *type* tended to perform about equally from manufacturer to manufacturer. So, we limited our testing to the four types of bits shown *below*.

ROUTER BITS THAT YIELD FLAT-BOTTOMED DADOES



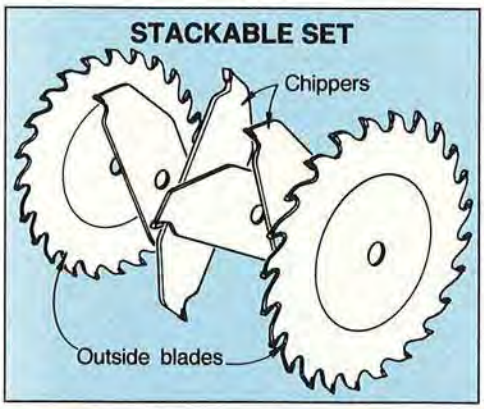
Carbide-tipped mortising bit | Carbide-tipped straight bit | Solid-carbide, downward-spiral bit | Solid-carbide, upward-spiral bit

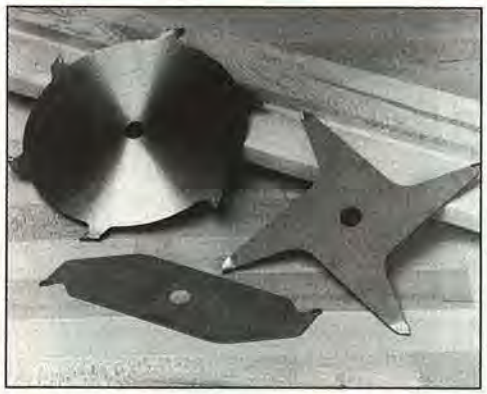
Blades and blade sets were a different story, though. We came across big performance differences from model to model of the same *type*. We tested assemblies ranging from 6" to 8" in diameter. (A few manufacturers provide 10" dado blades, but they're too large and heavy for 10" tablesaws.)

Manufacturers told us they sell more 8" models than any other size because they have greater cutting capacity than 6" products while not costing much more. For example, Freud's 8" model SD308 dado set sells for about $115, but the 6" version of the same product sells for only about $8 less.

These products will cut dadoes ranging from ¼" to 13⁄16" wide. Here's a look at the different types of dado blades and blade sets:

Stackable set. As shown *below*, most of these products consist of two ⅛"-kerf outside blades for cleanly shearing the walls of the dado, and four or five chippers for removing the stock between the outside blades. These chippers come in various widths (¼", ⅛", and 1⁄16") for cuts in 1⁄16" increments. For in-between sizes, you add shims (thin paper or metal discs) between the chippers.

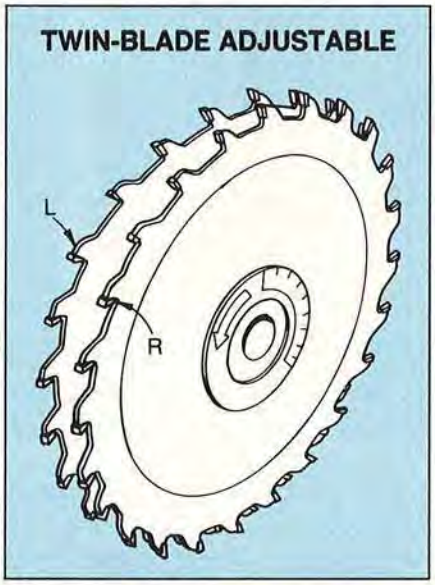




Most chippers have two carbide teeth, but Forrest and SystiMatic make four- and six-toothed chippers, respectively.

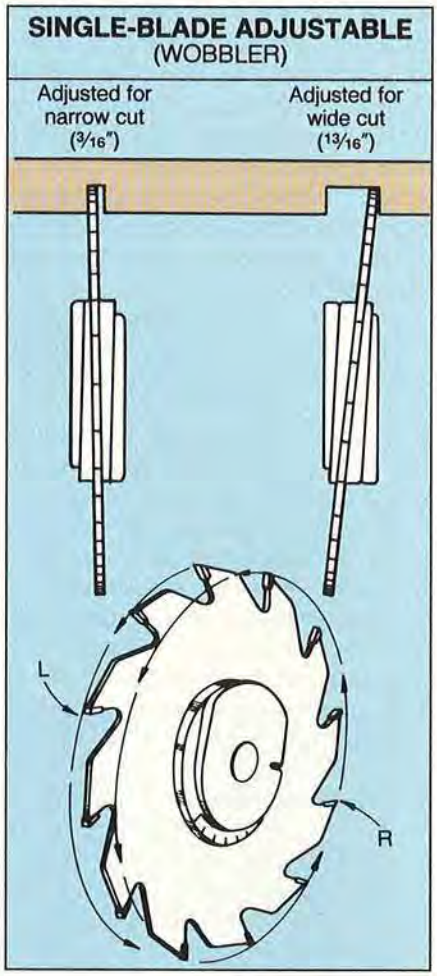
As shown in the photo *bottom left*, most carbide-tipped chippers have two teeth, but two premium sets—the Forrest Dado King and the SystiMatic Super Fine—have chippers with four and six teeth respectively. The extra teeth result in smoother dado bottoms and less "hammering" of the blade against the stock.

Twin-blade adjustable. To adjust the cutting width of this product, you simply turn a wedge mechanism at its hub. As shown in the drawing *below*, the two blades form a wedge themselves. The teeth at the point of the "wedge" clean out the middle of the dado, while the outermost teeth marked "L" and "R" in the drawing cut the left and right walls.



Single-blade adjustable. These tools, often referred to as "wobblers" have two round wedges on each side of the blade that you rotate to adjust the width of cut. As you can see in the drawing *above right*, the wedges angle the blade for various cutting widths.

Contrary to its nickname, this blade doesn't actually wobble from side to side. As shown *above*, one tooth (marked "L") stays along the left wall of the dado, and the tooth on the opposite side of the blade (marked "R") stays along the right wall. The other teeth also stay in orbits perpendicular to the saw arbor while cleaning out the dado.



Which do you need: dado blade, blade set, or router bit?

As a group, router bits have several advantages (besides just lower price) over dado blades and sets:

- Router bits cut smooth, chip-free, square, flat-bottomed dadoes in nearly any material (something that only dado sets costing $100 and up can do).
- You can't top the portability of a hand-held router when dealing with large, cumbersome workpieces (such as sheet goods).

Continued

- When cutting stopped dadoes, router bits make the job as easy and safe as possible. A stopped dado made with a router bit requires less cleanup than one cut with a blade or blade set.
- You can have a router bit sharpened for less than $5, but sharpening a stackable dado set will likely cost $25–$55.

Despite these merits, dado blades/sets still hold a special place in the hearts of most woodworkers for these reasons:

- Blade-based systems cut faster than router bits, and enable you to cut the dado in a single pass. A router often requires you to make multiple passes to achieve the necessary depth or width of cut. The more passes you make, the greater your chances of error.
- Most dado blades and sets will last a lifetime. Few router bits will do the same.

How we graded the tools

As you can see by the charts on *page 64*, we ran the dado accessories through a variety of materials, using a tablesaw, radial-arm saw, and router. For each cut, we assigned superior, excellent, good, fair, or poor ratings.

As shown in the photo *below left*, lesser-quality dado blades and sets have a tendency to chip laminates such as oak-veneered plywood (especially when cutting across the face grain). Some router bits handle laminates with ease, but a few leave fuzzy edges in softwood as shown *bottom right*. (In most instances, you can quickly sand away this fuzz.)

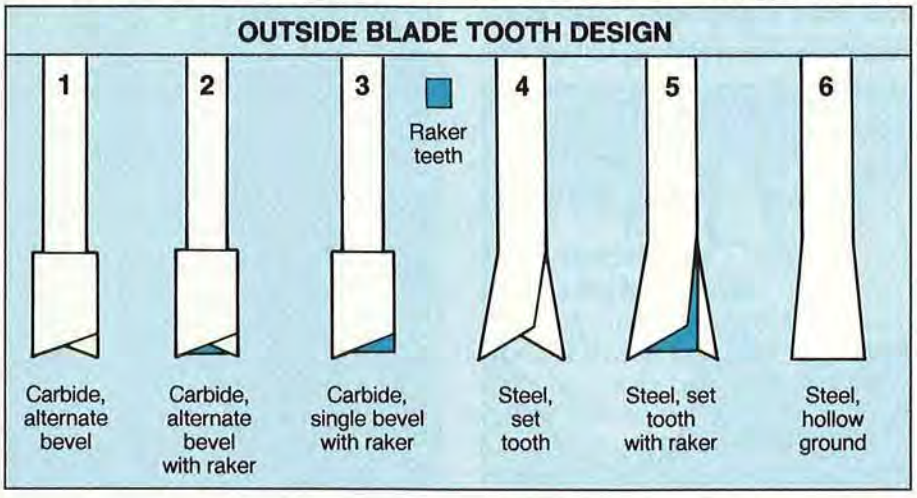
For cabinetry and furniture projects, look for tools that produce good-or-better cuts in the material you work with. For construction-type projects such as utility shelving, decks, or fencing, products with "fair" and "poor" ratings may meet your needs.

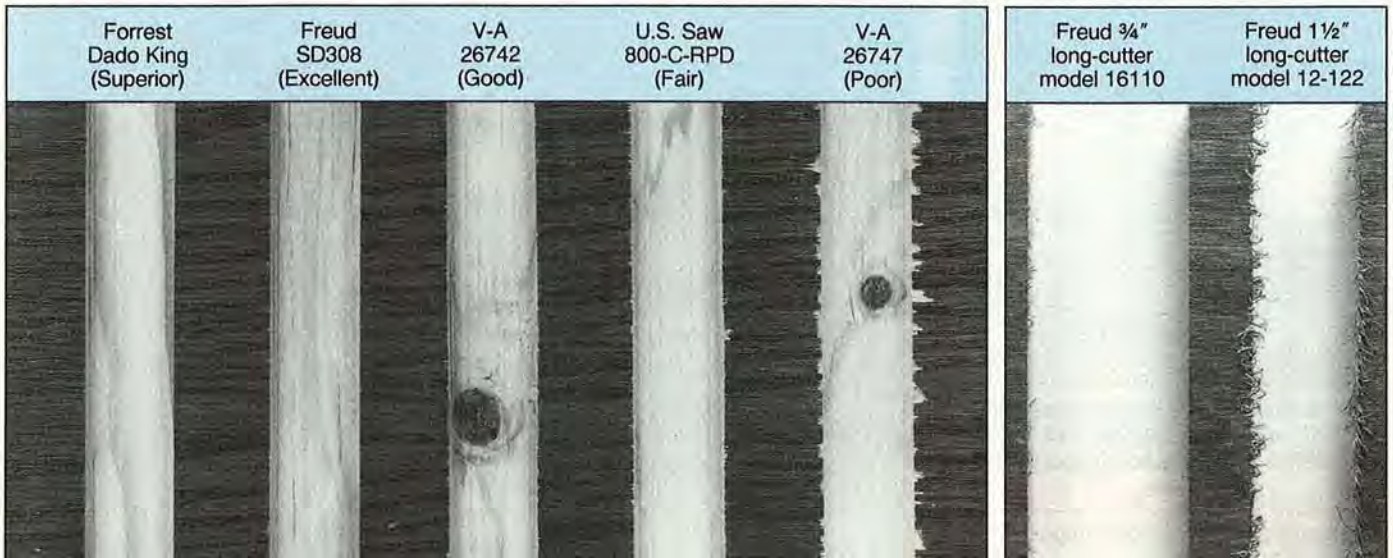
***Note:** If you already own a dado set that leaves a rough bottom, see page 31 for a product that offers you a solution.*

In the column "Outside-blade tooth design," we list which of the six tooth designs shown *below* you'll find on the outside cutters of the stackable sets. The cutters with raker teeth produced a flatter bottom near the walls of the dado. We like the blades with No. 3-designed teeth because they leave only small scoring lines in the bottom corners of the dado. These sets come with left and right outside blades, which must be kept in the correct orientation.

Steel, hollow-ground blades (sometimes called "thin-rim" blades) have one distinct disadvantage: When adjusted for a ¼" cut (no chippers), the set leaves a tiny sliver of wood in the middle of the dado as shown *below*.

Both of the steel, hollow-ground sets we tested—the Sears 32177 and Vermont American 26747—left a tiny ridge when cutting a ¼"-wide dado (no chippers).





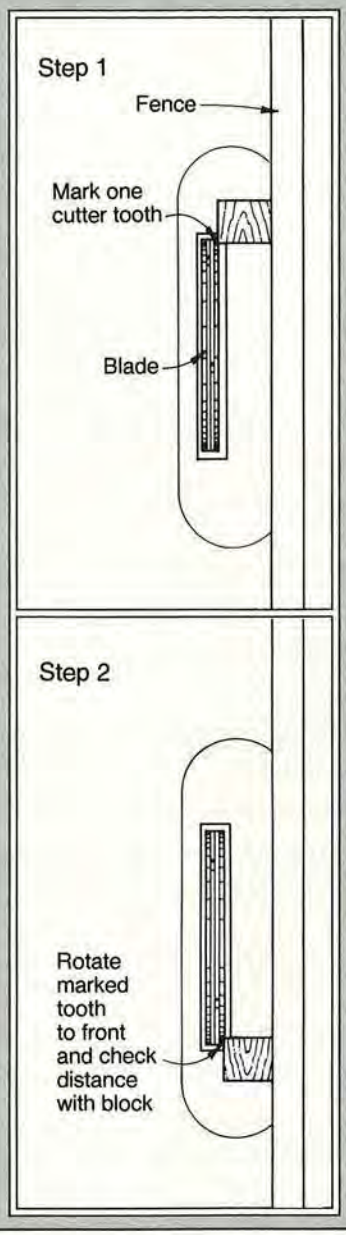
How to get the most from your dado blades and sets

At the start of our testing, we were astonished at the chipping and splintering produced by even the finest dado assemblies when mounted in a tablesaw. Obviously, our saw was contributing to the problem, and that's where we looked for solutions. By the time we were finished, our results had improved 100 percent.

First, we added zero-clearance table inserts to the tablesaw. (See page 44 for instructions on making these helpers). This addition alone improved our results by at least 40 percent. The reason: the insert acts as a chip breaker that helps the blade cleanly shear the wood fibers.

Then, with dial calipers we adjusted the rip fence parallel to within .001" to the dado blade and blade sets. Voilà! Our cuts improved another 40 percent. Of course, nobody wants to take the time to make such fine adjustments for every dado cut, so we wondered just how accurately a fence must be set. Through a series of tests, we determined that a fence can be misaligned up to 1/64" from front to rear and still produce superior results (with a superior blade).

The simple method shown at *right* will help you attain this level of accuracy. First, cut a block of wood to a width equal to the desired fence-to-dado distance. With the dado blade or set raised fully, place the block where shown in Step 1 and set the fence at this distance. Then, rotate the same tooth toward you as shown in Step 2 and use the block to check the fence for parallel. (With adjustable blades, be sure to use the outermost tooth.)



We improved our dados the final 20 percent by installing turned-metal pulleys and a link belt on our contractor's-style tablesaw. These products, shown in the photo *below*, reduced the machine's vibration in two ways: 1) the turned-metal pulleys are better balanced than the cast pulleys that come standard with most saws, and 2) link belts run much smoother than conventional drive belts. You can interconnect the belt links to form a belt of any size in 3/4" increments. To purchase these products for most contractor's-style saws, see the Buying Guide on *page 65*.

We reduced the vibration in our tablesaw by replacing its cast pulleys *(left)* with turned pulleys *(right)*, and adding a link belt.

Should you spend the big bucks for a good stackable-blade set?

If you intend to do cabinetry, furniture, and other projects that demand good-quality dadoes, then it pays to invest in a carbide-tipped, stackable dado set. Even the best adjustable dado blades do not produce good-or-better cuts in all materials. Although $100 or more may seem like a big investment for a saw *accessory,* keep in mind that such a set will give you a lifetime of service. And, with some hardwood plywoods costing $100 or more per sheet, a high-quality blade will quickly pay for itself if it saves just one or two panels.

Following are purchase recommendations in four price ranges. We based these guidelines on the assumption that you cut dadoes in a wide variety of materials. But, if you tend to make one type of cut in a specific material—say cross-grain cuts in oak plywood with a radial-arm saw—then look in the chart for the least expensive blade that gives good or better results under those circumstances.

- **Over $150:** All of the products in this price range cut like a dream and should satisfy even the fussiest woodworkers. But, only the Forrest Dado King earned "superior" ratings in every category. The set from Woodworker's Supply (made by FS Tool) might be a better value—if you can live with "excellent" crosscuts in solid stock and plywood.

Continued

DADO TOOLS

TIP: When having a $100-and-above dado set sharpened, ask the sharpener if he grinds to 400-grit or finer. Grinding such a set to only 180-grit or so will not restore the blade's original ability to cut smooth dadoes.

- **$100-$150:** The Freud SD308 yielded superior and excellent cuts throughout; mail-order outlets offer this product for about $115. The Amana 658030 and the Delta 35-560 earned similar marks and will meet the needs of most any woodworking situation.
- **$50-$100:** The Sears No. 32708 Excalibur twin-blade dado model ($76.47) produced good-or-better cuts in every material except pine and melamine-coated particleboard. In this price range and below, none of the blades produced perfectly flat bottoms, but the Excalibur comes close.
- **Under $50:** Here, we found only one blade that meets the needs of most home woodworkers: the Irwin 16120. This product had beefier construction than the other "wobble" blades, and produced the squarest dado of any blade in this price range. The same product used to be sold under the Accu-Edge name.

Which type of router bit works best?

If a router bit is what you need, try a downward-spiraled, solid-carbide bit such as the Freud No. 76-106 we tested. Because its flutes cleanly shear the wood downward, it creates little chipping or fuzzing along the dado edge. However, remember that this bit does not work well for mortises (a task the upward-spiraled version excels at).

If you want to spend a little less, buy carbide-tipped straight bits that will handle most jobs. In our tests, the versions with shorter cutters—about ¾"—produced the smoothest cuts.

DADO-CUTTING TOOLS:

STACKABLE

MANUFACTURER/ SUPPLIER	MODEL	BLADE DIA. (INCHES)	CARBIDE-TIPPED	TEETH PER CHIPPER	TEETH PER OUTSIDE BLADE (NOT INCL. RAKERS)	RAKER TEETH PER OUTSIDE BLADE	SHIMS INCLUDED	PERFORMANCE TABLESAW[1]: CROSS GRAIN OAK PLYWOOD	WITH GRAIN OAK PLYWOOD	CROSS GRAIN SOLID OAK	WITH GRAIN SOLID OAK	CROSS GRAIN PINE
AMANA	658030	8	YES	2	24	4	NO	E	S	E	S	E
DML	ID800	8	YES	2	24	2	NO	E	S	E	S	E
DELTA	35-560	8	YES	2	24	4	NO	E	S	E	E	E
DELTA	34-333	6	NO	2	36	6	YES	P	G	F	G	F
FORREST	DADO KING	8	YES	4	24	12	YES	S	S	S	S	S
FREUD	SD308	8	YES	2	24	4	NO	E	S	E	S	E
OLDHAM/US SAW	C800-CCD	8	YES	2	18	0	NO	F	G	F	E	G
OLDHAM/US SAW	800-C-RPD	8	NO	2	20	0	NO	F	F	F	F	G
SEARS	3264	8	YES	2	22	4	YES	F	E	F	E	G
SEARS	32177	8	NO	2	128	0	YES	F	E	G	E	G
SYSTIMATIC	SUPERFINE	8	YES	6	42	2	NO	S	S	S	S	E
SYSTIMATIC	FINE	8	YES	2	22	6	NO	E	S	E	S	E
VERMONT AMERICAN	26742	8	NO	2	48	8	YES	G	E	F	E	G
VERMONT AMERICAN	26747	7	NO	2	112	0	YES	P	G	F	E	E
WOODWORKER'S SUPPLY	800-764	8	YES	2	32	8	NO	E	S	E	S	E

ADJUSTABLE

CREDO	13436 ENDURO	7	YES	–	8	0	–	P	F	F	G	F
CREDO	10223	7	YES	–	12	0	–	P	F	P	G	F
DELTA	34-959	6⅜	YES	–	12	0	–	P	P	P	G	F
IRWIN	16120	6½	YES	–	8	0	–	G	E	G	E	F
SEARS	32708 EXCALIBUR	8	YES	–	24	0	–	G	E	G	E	F
SEARS	3262	7	YES	–	32	0	–	F	E	G	E	F
VERMONT AMERICAN	26752	6½	YES	–	12	0	–	P	P	P	F	P

1/2" SPIRAL AND STRAIGHT ROUTER BITS

MANUFACTURER/ SUPPLIER	MODEL	TYPE[2]	SHANK SIZE (INCHES)	CUTTING LENGTH	PERFORMANCE EVALUATION: CROSS GRAIN OAK PLYWOOD[1]	WITH GRAIN OAK PLYWOOD[1]	CROSS GRAIN SOLID OAK[1]	WITH GRAIN SOLID OAK[1]	CROSS GRAIN PINE[1]	WITH GRAIN PINE[1]	MELAMINE-COATED PARTICLE-BOARD
AMANA	45230	S	¼	¾	S	S	E	S	G	G	S
FREUD	75-108	CU	½	1¼	P	E	G	E	P	G	S
FREUD	12-122	S	½	1½	E	S	G	S	F	G	S
FREUD	16-110	S	½	¾	E	S	E	S	E	E	S
FREUD	76-106	CD	½	1¼	S	S	S	S	E	S	S
MLCS	905	CU	½	1½	P	G	P	F	P	F	S
MLCS	774	S	½	1 3/16	E	S	G	S	F	G	S
WOODHAVEN	30128	M	½	⅝	G	S	G	E	P	F	S

HOW THEY STACK UP

DADO SETS

EVALUATION												
RADIAL-ARM SAW[1]												
WITH GRAIN PINE	MELAMINE-COATED PARTICLEBOARD	CROSS GRAIN OAK PLYWOOD	CROSS GRAIN SOLID OAK	CROSS GRAIN PINE	MELAMINE-COATED PARTICLEBOARD	BOTTOM OF CUT[2]	OUTSIDE-BLADE TOOTH DESIGN[3]	WEIGHT (WITH ALL CHIPPERS) (OUNCES)	COUNTRY OF ORIGIN[4]	LIST PRICE	SELLING PRICE[5]
S	E	G	E	E	S	E	3	73	IS	165.00	$110.00
S	E	E	E	E	S	E	3	73	US	233.10	200.00
E	E	G	E	E	E	E	3	73	IS	270.33	150.00
F	G	G	G	E	F	F	6	31	US	66.65	60.00
S	S	S	S	S	S	S	3	82	US	299.00	254.00
S	E	E	E	E	S	E	3	86	IT	218.90	115.00
G	F	F	E	E	G	E	1	59	US	198.62	149.00
E	P	F	F	E	F	F	5	73	US	42.92	35.00
E	G	P	F	G	G	G	2	66	US	–	89.99
G	E	E	S	E	S	F	6	78	US	–	54.99
S	S	S	S	E	S	S	3	139	US	347.50	310.00
E	G	E	E	E	S	G	3	82	US	198.00	155.00
G	F	E	G	G	G	F	3	74	US	60.49	52.00
E	G	G	E	F	G	G	4	59	US	60.49	55.00
S	S	E	S	E	S	S	3	81	C	289.00	179.00

DADO BLADES

G	P	P	P	F	P	G	–	26	US	34.70	29.00
G	P	P	P	F	P	E	–	24	US	47.24	35.00
G	P	F	F	F	P	P	–	16	J	45.05	41.00
G	G	F	G	G	E	E	–	18	US	61.00	45.00
E	F	G	G	G	E	G	–	33	US	–	76.47
G	G	F	G	F	G	E	–	28	US	–	49.99
F	P	P	F	F	G	G	–	16	US	44.00	36.00

BOTTOM OF CUT[2]	COUNTRY OF ORIGIN[4]	LIST PRICE	SELLING PRICE[5]
S	IS	$15.85	$14.00
S	US	49.40	40.00
S	IT	17.80	14.00
S	IT	16.70	14.00
E	US	45.40	35.00
S	US	–	29.00
S	T	–	10.00
S	US	–	17.00

Footnotes for charts

1. **S** Superior - No imperfections.
   E Excellent - Some sandable fuzz on shoulders of dado; no chips on stock surface.
   G Good - Some sandable fuzz on shoulders of dado; minor chipping on stock surface.
   F Fair - Chips on surface of stock; not acceptable for quality work.
   P Poor - Large chips on surface of stock that require filling.

2. **S** Superior - Flat, smooth bottom that's square to the walls.
   E Excellent - Flat bottom with slight roughness.
   G Good - Minor ridges.
   F Fair - Uneven bottom with large ridges.
   P Poor - Concave-shaped bottom.

3. See drawing on page 62 .

4. (C) Canada
   (J) Japan
   (IS) Israel
   (IT) Italy
   (US) United States

5. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's writing.

This footnote pertains to the router-bit chart only

6. (CD) Solid-carbide, downward-spiral bit.
   (CU) Solid-carbide, upward-spiral bit.
   (M) Carbide-tipped mortising bit.
   (S) Carbide-tipped straight bit.

Written by Bill Krier
Product testing: Bob McFarlin
Illustrations: Kim Downing, Bill Zaun
Photographs: John Hetherington

Buying Guide

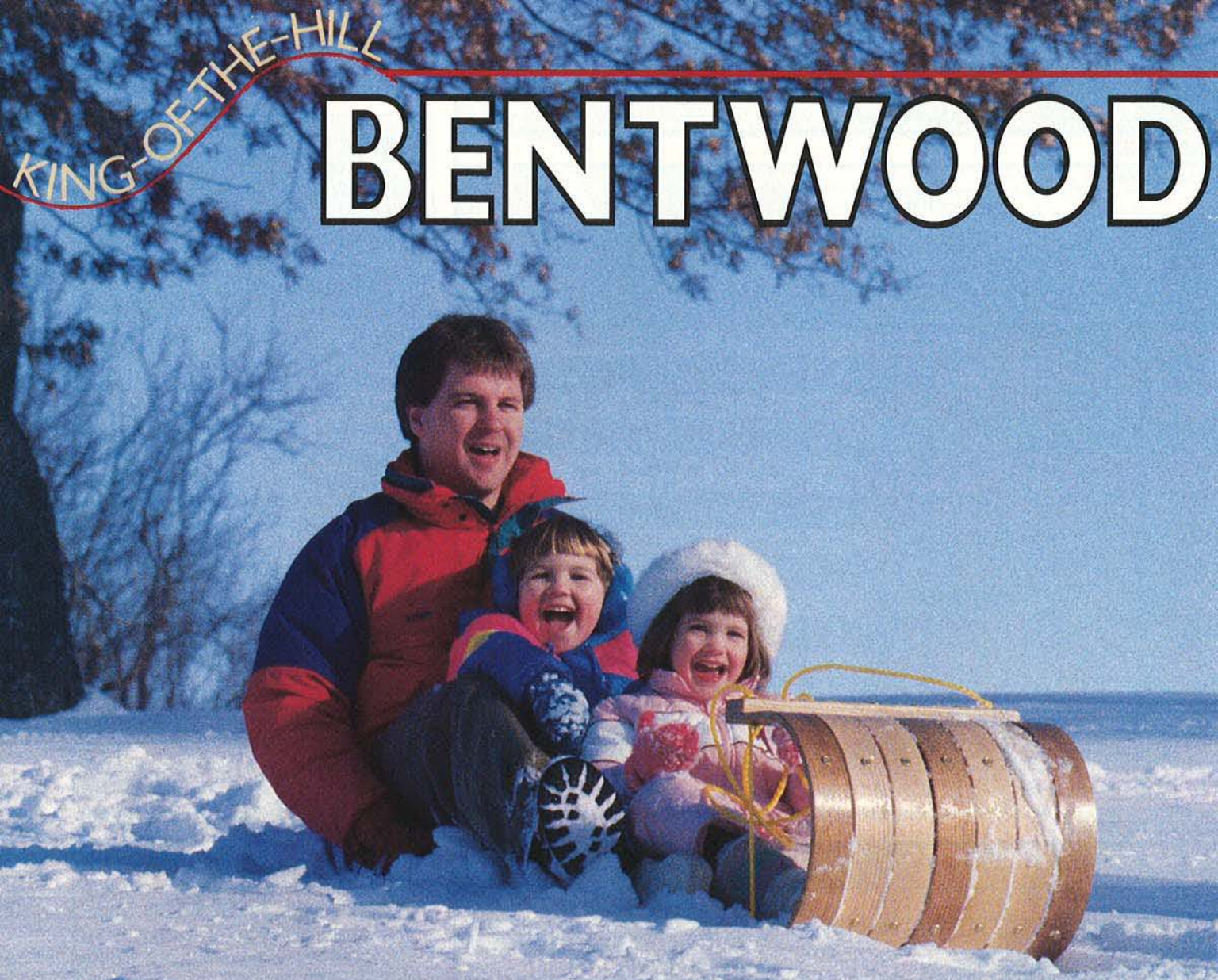
• **Turned-metal pulleys and link belt.** Two pulleys and 4' of link belt, $34.95 ppd. ($19.95 ppd. for the belt and $15 ppd. for the pulleys if purchased separately). Specify tablesaw model. Inline Industries, 661 S. Main St., Webster, MA 01570. Call 800/533-6709 or 508/949-2968.

Manufacturers' listing:

Amana
800/445-0077 or 516/752-1300
Credo
503/982-0100
DML
800/233-7297 or 502/587-5562
Delta
800/438-2486 or 412/963-2400
Forrest
800/733-7111 or 201/473-5236
Freud
800/334-4107 or 919/434-3171
Irwin
513/382-3811
MLCS
800/533-9298 or 215/886-5986
Oldham/US Saw
800/828-9000 or 716/778-8588
Sears
Call your nearest store
SystiMatic
800/426-0000 or 206/823-8200
Vermont American
704/735-7464
Woodhaven
800/344-6657 or 319/391-2386
Woodworker's Supply
800/645-9292 or 505/821-0578

KING-OF-THE-HILL

BENTWOOD



Last winter, I took my daughters Sasha and Chelsy, pictured *above*, to a sporting-goods store to pick out a toboggan. But after seeing the poor quality of available sleds, I got together with our project designer, Jim Downing, to design and build our own. The result—a sleek bentwood toboggan that really flies. Build yours now, and be ready to enjoy it by the first snow.

Marlen Kemmet

Marlen Kemmet, How-to Editor

TOBOGGAN

Print this article

Note: *You'll need some 1/16"-thick ash strips for the curved portion of each runner. We resawed our own stock. See our resaw jig* on page 80 *for the method we used to cut our own thin stock.*

We recommend slow-set epoxy for laminating the runners. If you're unfamiliar with how to work with this type of adhesive, see the article on page 71 *for details. And, for added seat comfort, consider buying the cushioned pad shown. See the Buying Guide at the end of the article for our source of these two items.*

Build the form to laminate the runners

1 From ¾" particleboard or plywood, construct a form and base like the ones dimensioned on the Runner Lamination Form drawing at *right*. Use the Form Top View drawing, *bottom right*, for dimensions when cutting the curved form pieces to shape. (To form the curved pieces, we cut three pieces of ¾" particleboard to 12×24", and glued them together face-to-face. Later, we marked the layout lines, cut the form to shape, and sanded the cut edges.)

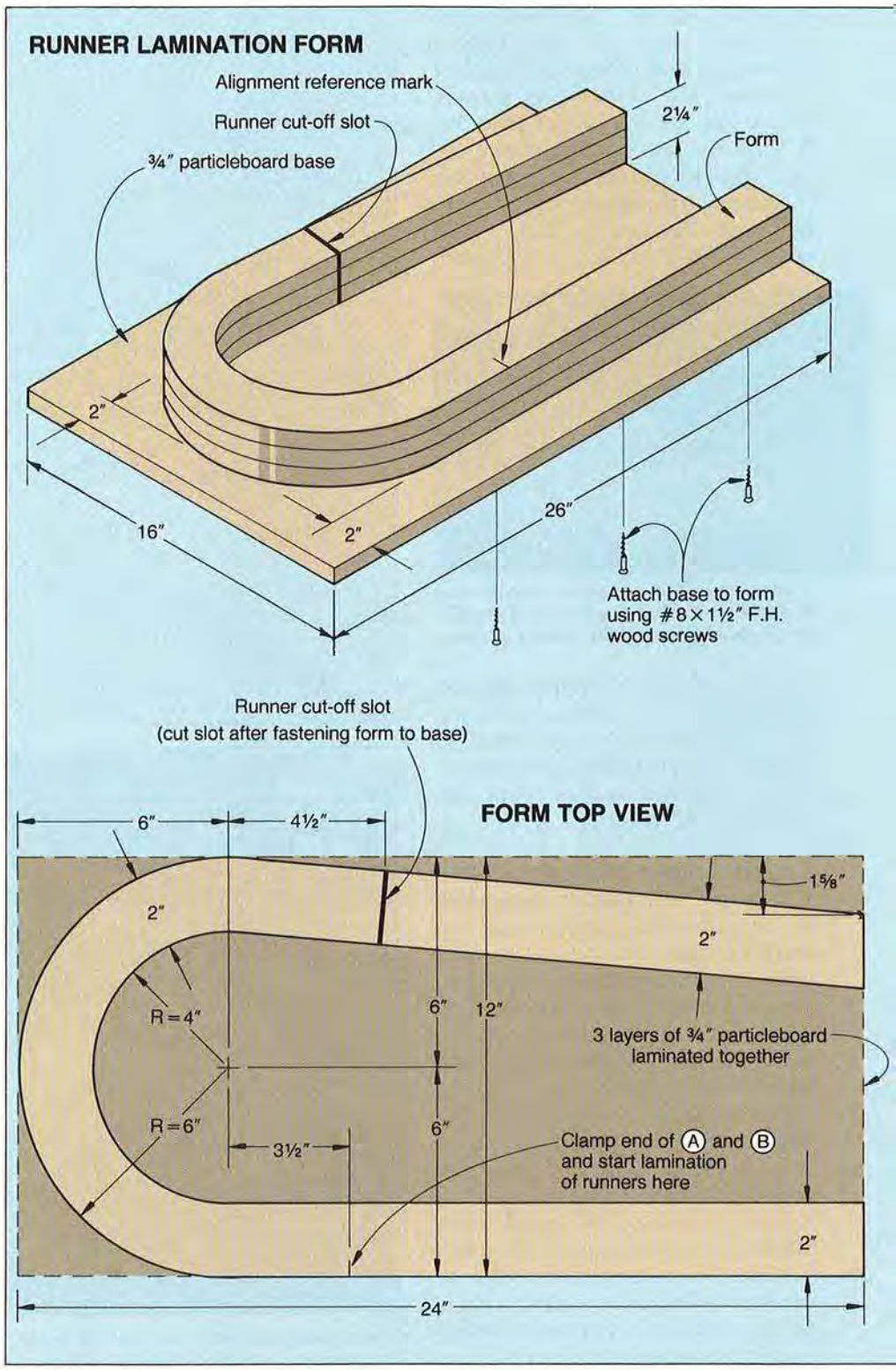
2 Drill mounting holes through the base and into the bottom surface of the form. Glue and screw the form to the base.

Cut the pieces for the runners

1 From ½"-thick straight-grained ash, cut seven runners to 2¼" wide by 75⅜" long. Now, plane four of the runners (B) to ⅜" thick. Leave the remaining runners (A) at ½" thick.

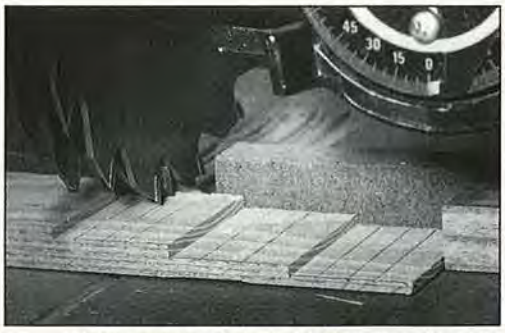
2 Mount a dado blade to your radial-arm saw or tablesaw. Next, cut a set of three stepped 1½" dadoes to the depths shown across one end of each thick runner (A),

Continued



using the Runner Joints drawing at *right* and the photo *below* for reference. Cut just two dadoes across one end of the four thinner runners (B) to the size shown. Use a stop for consistent lengths.

3 To form the runner strips (C), use straight-grained ash, and rip 52 strips (this includes four extra strips in case of breakage) 1/16" thick by 2¼" wide by 38" long.



Using a stop for consistent lengths, cut the rabbets for the stepped-scarf joint in the ends of the straight runner pieces.

(We cut ¾"-thick straight-grained ash to 2¼×38". Then, we used the resaw jig shown on *page 80* and a thin-kerf blade to resaw our own 1/16"-thick strips from the ¾×2¼×38" pieces of stock.)

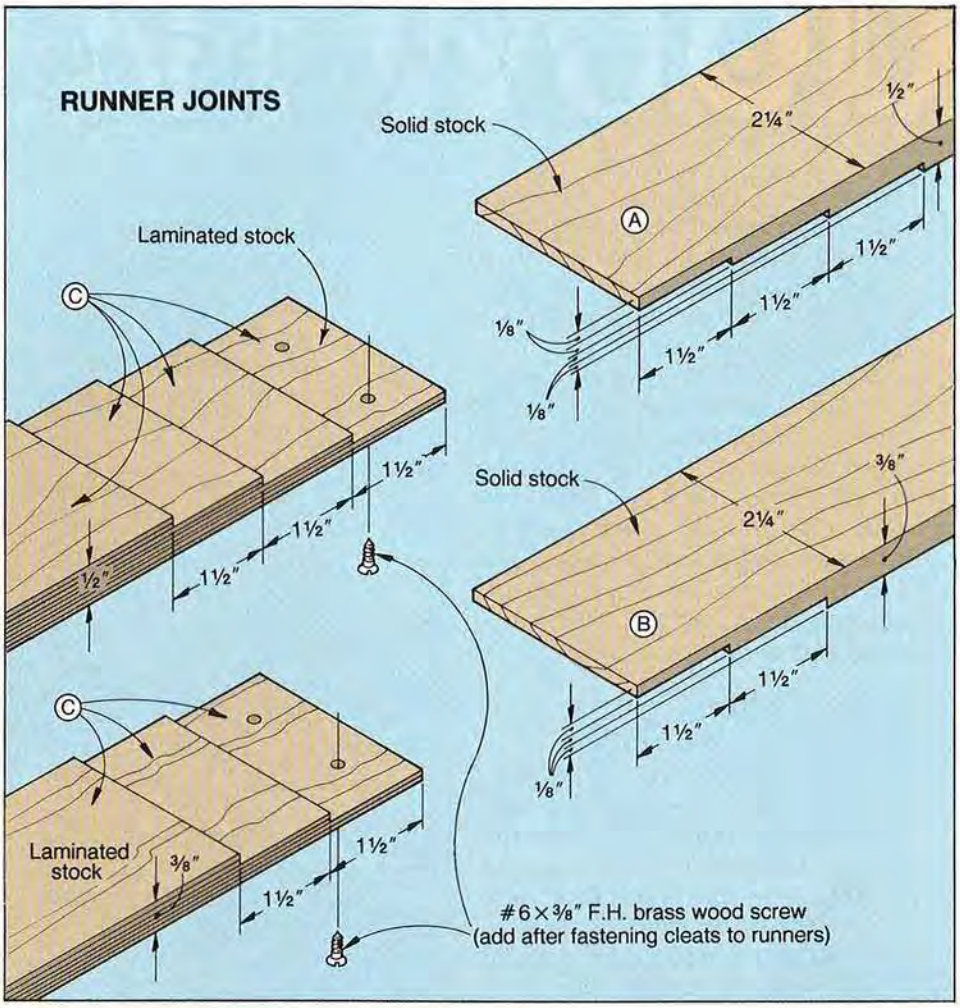
Laminate the curved fronts

1 Prepare the form for laminating by coating with paraffin wax the surfaces that will be in contact with the runner strips. The wax prevents any epoxy that accidentally leaks through tears in the waxed paper from bonding to the particleboard form.

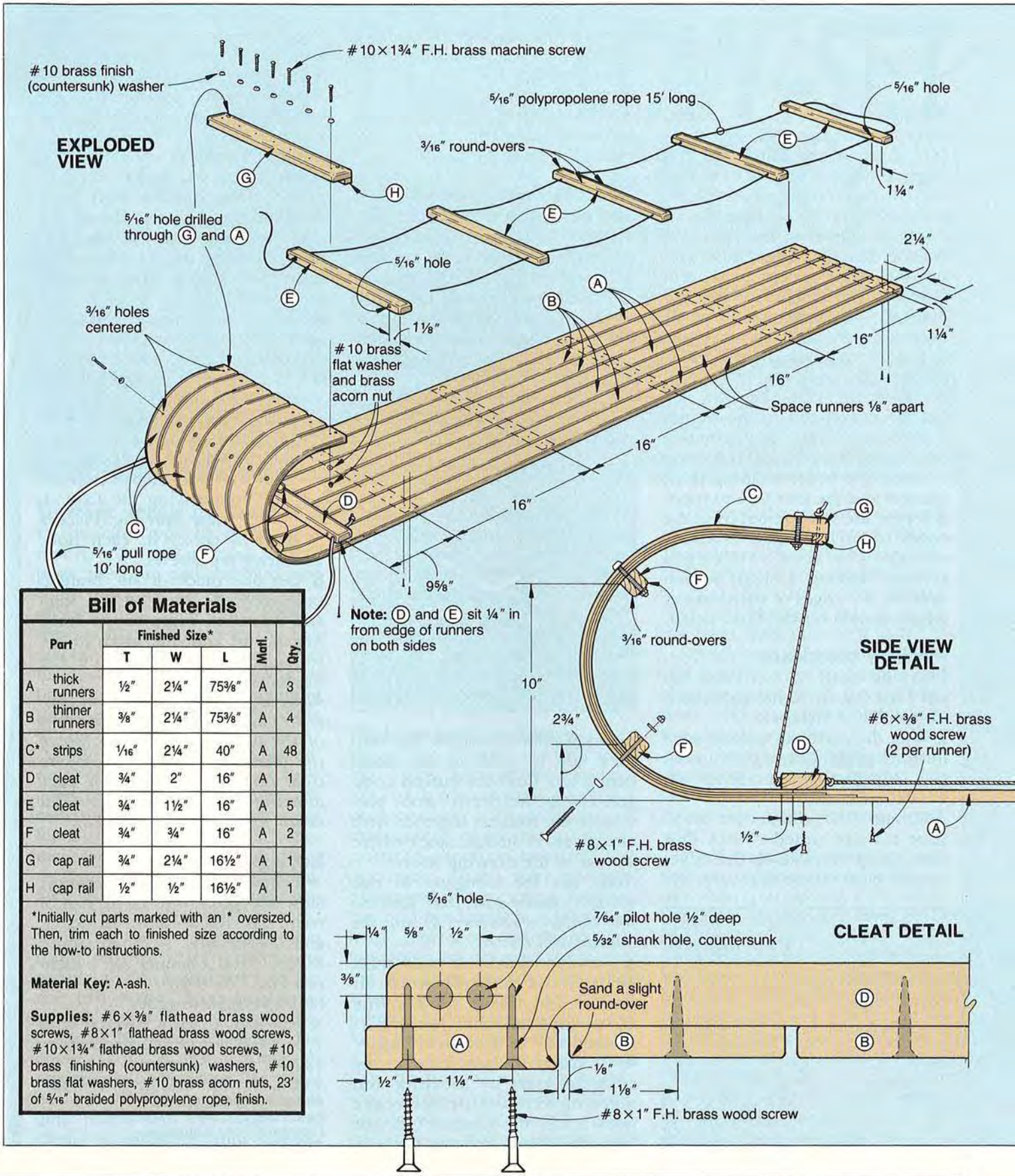
2 Cover the form with waxed paper to further prevent the strips from sticking (see the photo at *right* for reference). Then, cut a dozen 1×2×2¼" and one 1×2¼×6" clamp blocks to size.

3 Clamp a runner piece (A) to the form so that the dadoed end is flush with the alignment reference mark and facing out.

Continued



Epoxy and clamp the thin ash strips to the straight rabbeted runner and then around the laminated form to create the bent front of the toboggan.



Bill of Materials

Part		Finished Size*			Matl.	Qty.
		T	W	L		
A	thick runners	½"	2¼"	75⅜"	A	3
B	thinner runners	⅜"	2¼"	75⅜"	A	4
C*	strips	1/16"	2¼"	40"	A	48
D	cleat	¾"	2"	16"	A	1
E	cleat	¾"	1½"	16"	A	5
F	cleat	¾"	¾"	16"	A	2
G	cap rail	¾"	2¼"	16½"	A	1
H	cap rail	½"	½"	16½"	A	1

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

Material Key: A-ash.

Supplies: #6×⅜" flathead brass wood screws, #8×1" flathead brass wood screws, #10×1¾" flathead brass wood screws, #10 brass finishing (countersunk) washers, #10 brass flat washers, #10 brass acorn nuts, 23' of 5/16" braided polypropylene rope, finish.

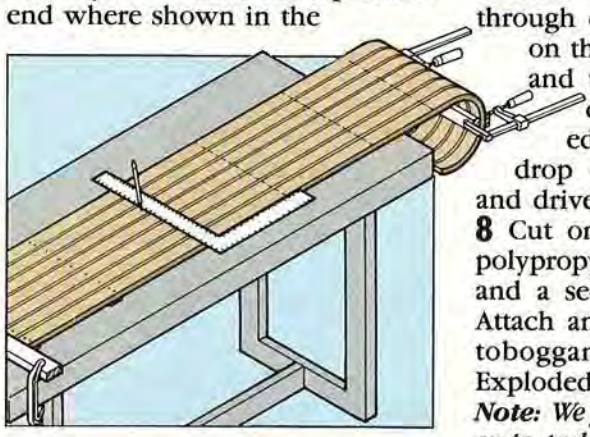
4 Spread epoxy on the mating surfaces of eight of the thin strips (C). Position and clamp the thin strips to the dadoed end of runner (A) to form what professional woodworkers call a "stepped-scarf joint," as shown in the photo on *page 68*. Keep the edges flush, and use the clamp blocks to prevent marring the runners with the clamps. Let the lamination sit overnight for the epoxy to set up.
5 Before removing the clamps, cut the top curved end of the runner to length with a backsaw, using the cut-off slot in the runner lamination form. Now, remove the clamps and repeat this process to make the two remaining thick runners and the four thin runners.
6 Scrape the squeeze-out from the edges of each runner. Sand the runner surfaces and edges smooth, making a slight round-over on the edges of each runner where shown on the Cleat detail.

Machine the cleats

1 Cut the cleats (D, E, F) and cap rail parts (G, H) to the sizes listed in the Bill of Materials.
2 With the ends and outside edge flush, glue and clamp the cap rail part G to part H. Later, scrape off the excess epoxy.
3 Mount a 3/16" round-over bit to your table-mounted router, and rout round-overs along the edges of each cleat where shown on the Exploded View drawing and accompanying Side View detail.
4 Mark the locations and drill 5/16" holes through the cleats for the ropes. As shown in the Cleat detail, you'll need a pair of rope holes on each end of the front cleat (D). Sand the cleats.

Add the finish, assemble, and head for the hills

1 Finish-sand the runners and cleats. Stain the three thicker runners. Seal each piece with an exterior finish (we applied four coats of exterior polyurethane). Finishing the toboggan now seals areas you'd be unable to get at after the toboggan's assembled.
2 Clamp a straight piece of stock across your workbench top at one end where shown in the

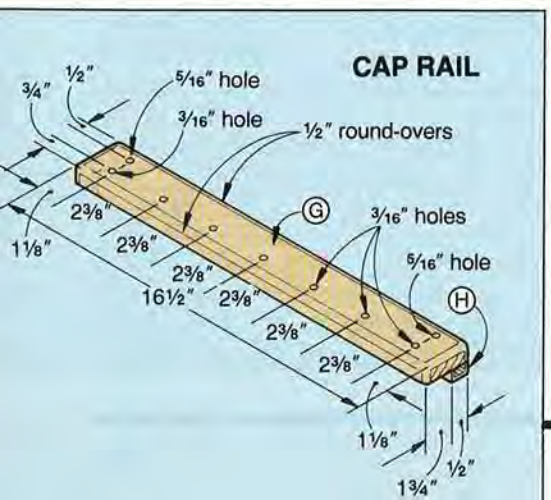


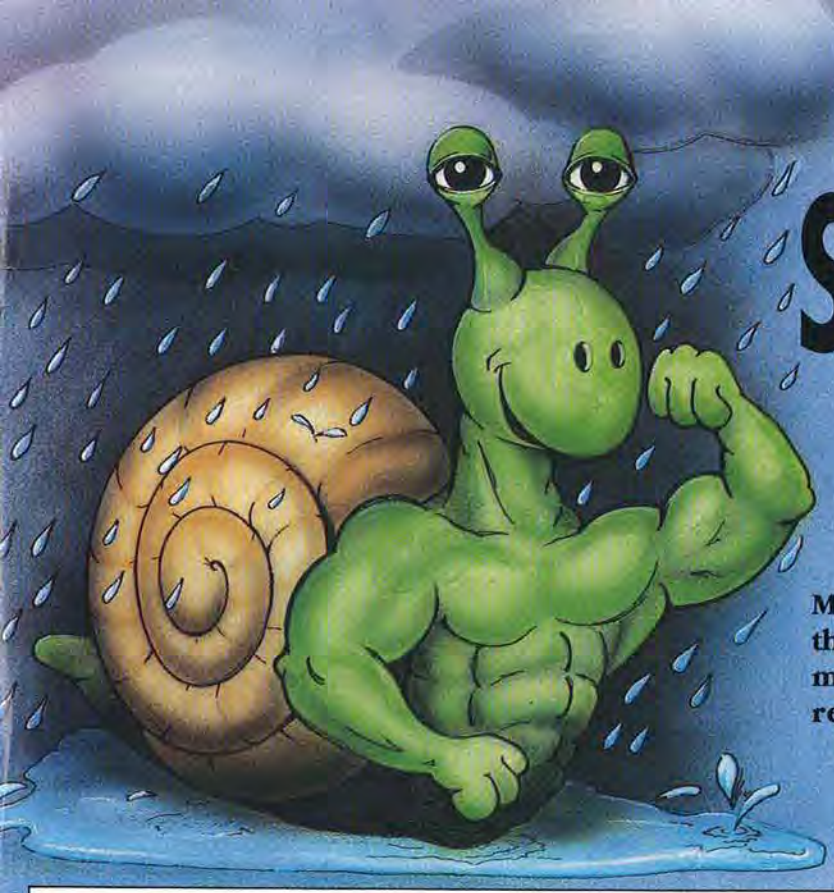
drawing *above*. Position the runners side by side on the workbench top, flush the curved ends, and clamp the curved front portion of the runners together with two pieces of straight stock where shown in the drawing *above*.
Note: *For the toboggan to ride straight, make sure that you use the thicker runners (A) on the outside and center.*
3 Position the back ends flush against the straight stock. If they're not flush, mark a line across the ends, and use a fine-toothed saw to trim them flush.
4 To attach the rear cleat to the runners, start by locating and marking screw-hole reference lines across the runners (see the Exploded View drawing for location). Next, drill and countersink holes through the bottom of the runners and into the cleat to the sizes shown on the drawing. Be careful not to drill through the cleats (we used a depth stop on our drill bit.)
5 Place a drop of epoxy in each screw hole, and fasten the rear cleat to the runners with brass wood screws where shown on the Exploded View drawing and accompanying details. The epoxy keeps the screws from working loose over time.
6 Repeat the drilling, epoxying, and screwing process until all the cleats have been firmly attached.
7 To further strengthen the stepped-scarf joint, drill and countersink a pair of screw holes through each joint where shown on the Runner Joints drawing and the Side View detail accompanying the Exploded View drawing. Place a drop of epoxy in each hole, and drive the screws.
8 Cut one piece of 5/16" braided polypropylene rope to 15' long and a second piece to 10' long. Attach and knot the ropes to the toboggan where shown on the Exploded View drawing.
Note: *We found the toboggan easier to pull by moving the position of the pull rope from the top of the toboggan (see the photo) to cleat (D). See the Exploded View drawing and accompanying Cleat detail for the revised position.*

Buying Guide

- **Tropical hardwood epoxy.** Slow-set epoxy, one 16-oz. can of resin, one 16-oz. can of hardener, and instructions. $27 ppd. Smith & Co., 5100 Channel Ave., Richmond, CA 94804. Or, call 800/234-0330 to order.
- **Seat pad.** 1" foam covered with 13½×64" vinyl, 10 grommets, $22.95 ppd. Sleepland 4412 NE 14 St., Des Moines, IA 50313.

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: John Hetherington
Illustrations: Kim Downing; Mike Henry





A FAST TAKE ON SLOW-SET EPOXY

More forgiving than its quick-set cousins, this tough-guy glue stands up to the elements. So when you're building a project requiring moisture-proof, high-strength bonding and weather resistance, it's the only glue.

Print this article

Slow-set versus quick-set

To use any type of epoxy, you first have to mix together its two parts: the resin and the hardener. With quick-set, or "five-minute," epoxy, you'll then only have a few minutes to mate up the pieces to be bonded. On the other hand, slow-set epoxy gives you an hour or more of open working time, and it takes up to 24 hours to cure completely.

Both slow-set and quick-set epoxies shrink very little as they cure. This makes both of them excellent gap fillers. Slow-set even lends itself to mixing with other material, such as colloidal silica, or fine sawdust to become a colored putty. And, both types can bond dissimilar materials.

For fast, on-the-spot repairs that don't require water resistance, count on quick-set epoxy to get the job done. Boat builders, though, favor slow-set epoxy because of its water resistance. We chose it for use on our toboggan project on the previous five pages because the wood, along with all glue joints, will be exposed to plenty of moisture from melting snow and ice.

Slow-set epoxy also rates slightly stronger than the quick-set type. However, the proper mix of resin and hardener is the key to successful gluing. Most slow-set epoxies require a one-to-one mixing ratio. Some, however, call for up to five parts resin to one part hardener. So, carefully follow the manufacturer's directions.

Minimal heat shrinkage

Epoxy also shrinks very little during curing because the exothermic (heat-producing) polymerization (combining of molecules) continues until all possible chemical bonding has occurred. That's why epoxy's heat-producing curing process can be a hindrance or a help. As a help, cool shop conditions (below about 60 degrees) slows curing for more working time. But warming the epoxy, say with a portable hair dryer, speeds it up for a faster bonding time.

When you mix and apply epoxy, be sure to wear disposable vinyl gloves. And beware—some people when they touch epoxy encounter an allergic reaction that irritates the skin.

Dispense the required amounts of resin and hardener in a disposable paper or plastic cup (for large amounts, you can use a metal can). Because epoxy creates heat, you shouldn't mix it in an insulated foam cup—it'll melt.

Remember to mix only what you need or can apply in a reasonable amount of time. Then, with a stick or plastic paddle, stir the parts thoroughly.

For best results, apply the epoxy evenly to both mating surfaces with a brush, spatula, or roller. Join small, intricate items with a syringe.

You'll need less clamping pressure on material joined with epoxy than you would with other adhesives. Light and even pressure does the job. In fact, overclamping squeezes out the epoxy, leading to a weak, glue-starved joint. Use wax paper or paste wax to protect surfaces that you don't intend to glue. And, using a solvent, such as acetone or vinegar, clean off all epoxy that squeezes out before it sets. Cured, epoxy proves nearly impossible to remove from a surface.

Illustration: Jim Stevenson

Print this article

ROLL IN THE DOUGH WITH OUR STRAIGHT 'N' NARROW NOODLE CUTTER

Fine woodturning and gourmet cookery come together in this unusual design. When you're done at the lathe, turn out some noodles with the recipe on page 88 provided by our friends at the *Better Homes & Gardens*® Test Kitchen.

We used these tools and supplies

3×3×18″ turning square of hard maple, yellow birch, or other close-grained hardwood; lathe; centers; ⅛″ parting tool; ¼″ gouge; ⅜″ gouge; ½″ gouge (optional); outside calipers; tape measure; straightedge.

LATHE SPEEDS
Roughing: 800-1200 rpm
Sanding: 1300-2000 rpm
Finish cutting: 1200-1800 rpm

***Note:** Turning the noodle cutter's coves and cutting edges requires careful, consistent tool control. Practice those cuts on scrap material before beginning the project.*

First things first

Mount the turning square between centers, and round it down to 2¾″ diameter with the ⅜″ or ½″ gouge. Gauge the diameter at the ends and several points along the length with calipers.

Lay out the turning on your rounded blank with a sharp pencil. Starting at the headstock end, leave ⅝″ for waste. From there, mark consecutively a 2″ section for the ball end of the handle, 1″ for the handle cone, 11″ for the main coved body, another 1″ handle cone, and another 2″ ball end. The remaining portion at the tailstock end will be waste. (See Full-Sized Half Pattern, *opposite page,* for reference.)

With the ⅛″ parting tool, cut ⅜″ deep on the outside and inside of each ball end, leaving a full 2″

width for the ball. Next, taper the areas from each end of the 11" center section toward the ball. Now, turn the center section to 2⅝" diameter. Check the surface for unevenness with a steel straightedge, and gauge the diameter at the ends with calipers to insure that the cylinder is true.

Sand the center section with 150-grit sandpaper, and then recheck with the straightedge. Complete the sanding with 220-grit and then 400-grit sandpaper.

Now for the cutting edges

Transfer the template from the Full-Sized Half Pattern, *right*, to posterboard, and cut it out with an X-acto knife. Now, on your turning, lay out marks ⅜" on center along the 11" section, starting from the middle and working toward each end. With the lathe at a slow speed, about 800 rpm, draw a pencil line around the cylinder at each mark. These will be the noodle-cutting edges. (See the half-pattern for reference.)

Now, refer to the Cutting the Coves drawing, *below,* and cut ⅛" deep midway between each pair of lines with the ⅜" gouge. Next, widen each cove with two careful cuts, one from the pencil line on each side to the center of the cove. Start each cut *at* the pencil line, but be sure to leave the line.

Then, with a ¼" gouge and working from one end of the noodle cutter to the other, round out the coves to about 3/16" deep. Maintain the symmetry and consistent shape of the coves by checking with the template.

With the lathe running, sand inside the coves with 150-grit sandpaper rolled into a tube. Follow with 220-grit. With the lathe stopped, lightly sand the cutting edges—just enough to erase the pencil lines—with 400-grit sandpaper. Be sure the cutters don't come to a knife edge.

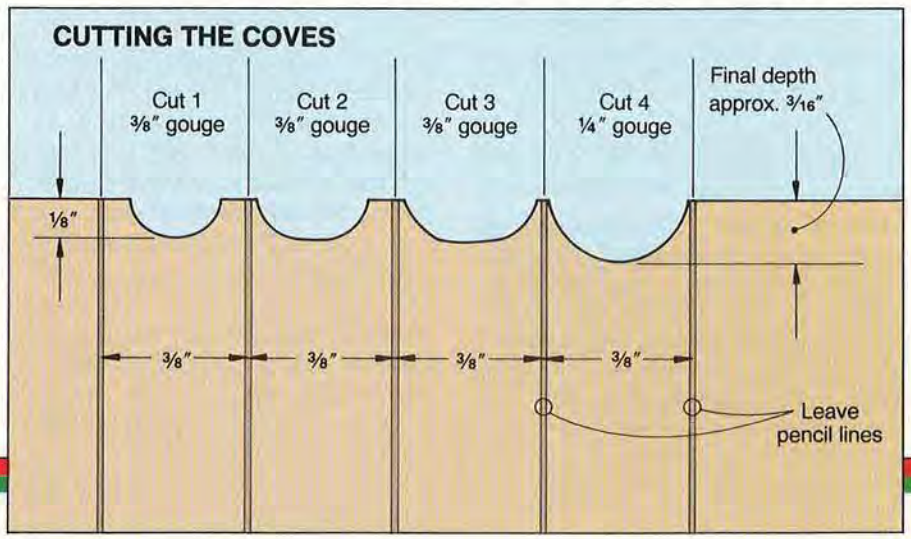
Here's how to turn the ball handles

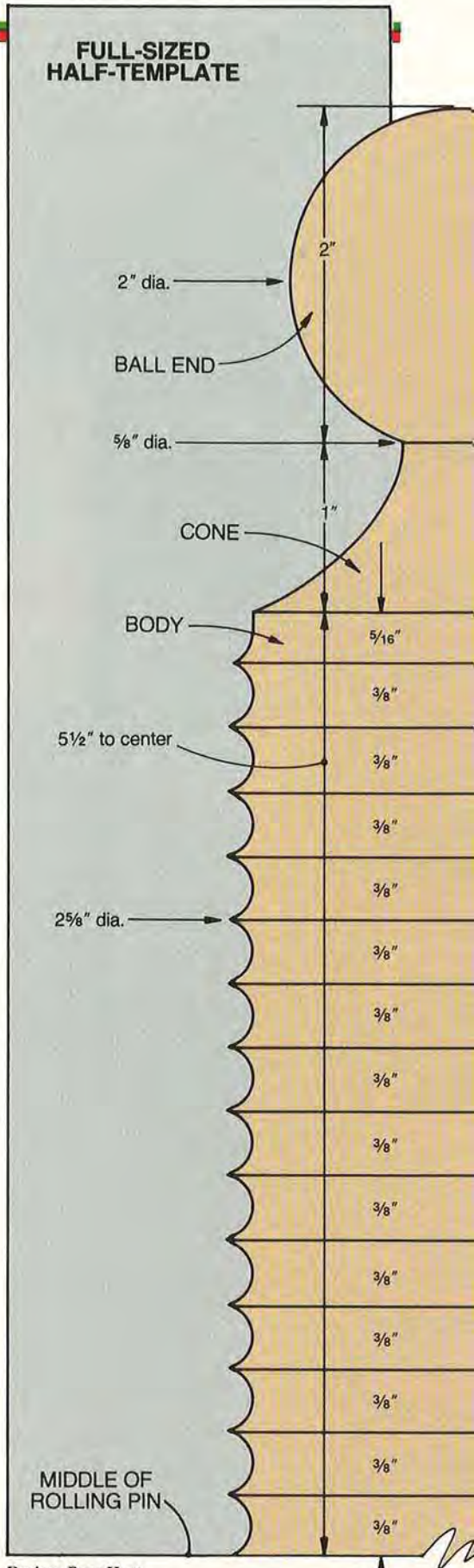
Part in to 2" diameter in the middle of each ball section, checking with calipers. Remove the waste on either side almost to the parting-cut depth. Cut in to about 1" deep on each side of each ball section. Now, form the ball ends with the ⅜" gouge. Make room for the tool by cutting into the handle cone area and the waste areas on the ends of the turning.

Part in to ⅝" diameter at the point where the ball joins the cone, checking with calipers as you cut in. Sand the ball ends and cones with 150-grit sandpaper followed by 220-grit.

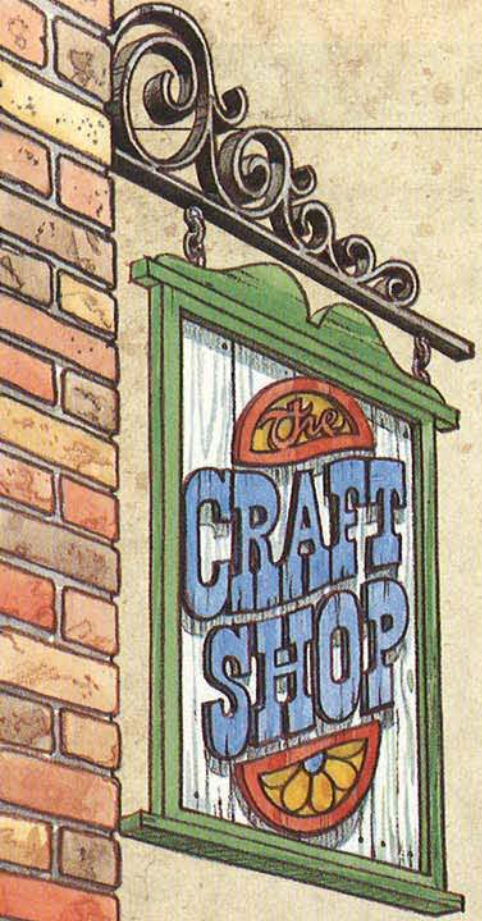
Cut the waste ends to ⅛" diameter. Shut off the lathe, and remove the turning with a coping saw. Sand the area to match the ball contour in graduating grits up to 400-grit sandpaper.

Finish the noodle cutter with a food-safe finish such as Livos Kaldet Resin and Oil Finish, or Behlen's Salad Bowl Finish.





Design: Russ Hurt
Illustrations: Kim Downing; Mike Henry
Photograph: Hopkins Associates



A hands-down winner for lotion and soap

Walnut-clad PUMP DISPENSER

Print this article

A handy pump dispenser for soap or hand lotion that's easy to build and looks great, too? Where else but The Craft Shop? Your reward for a little effort on this one: the perfect finishing touch for your kitchen or bathroom.

***Note:** You'll need ¼"-thick stock for this project (we used walnut). Plane thicker stock to size, or resaw the stock using our simple resawing jig on page 80.*

From ¼"-thick stock, cut two 2⅞" squares for the top and bottom, then bevel-rip eight pieces 1⅛ × 5⁹⁄₁₆" at 22½° for the sides.

Lay the sides, bevel down, next to each other on your workbench. Align the ends and tape the pieces together with masking tape or reinforced strapping tape. (See the Body Strips drawing.) Turn the assembly over, and roll it into an octagon, checking all joints for a tight fit.

Unroll the sides, then apply woodworker's glue to the open joints. Roll up the sides again, making sure all joints are tight. Secure with tape until the glue sets.

Use a Forstner bit or holesaw to bore a 1⅛" hole in the center of one square. Back it with scrapwood to prevent tear-out. Then, using the body as a guide, cut the corners off both squares, leaving a margin on all sides.

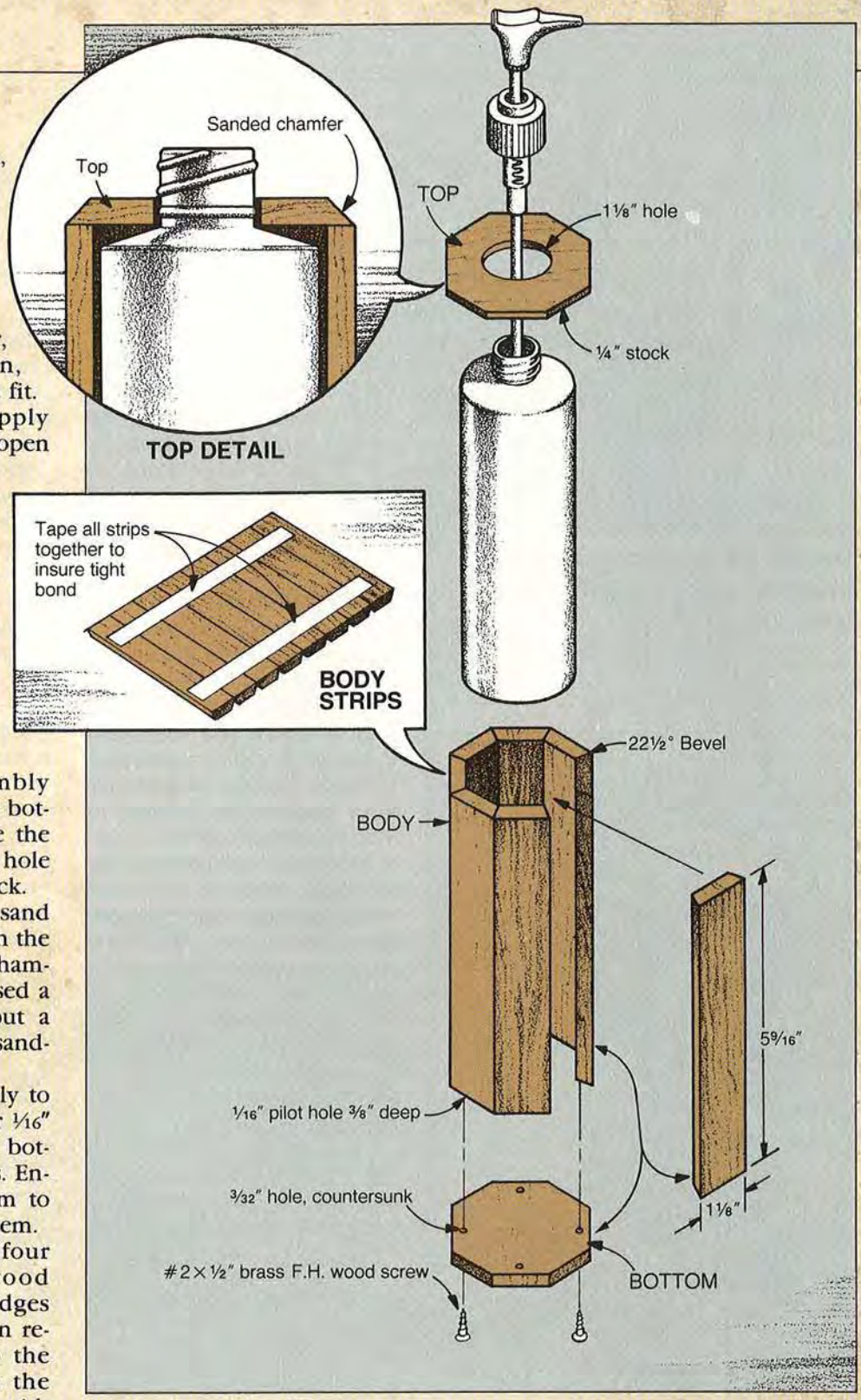
Remove the pump assembly from the bottle, and slide the bottle into the body. Now, glue the top into place, locating the hole in the top over the bottle neck.

With a disc or belt sander, sand the edges of the top flush with the body sides. Then, sand 45° chamfers on the top edges. (We used a miter gauge for accuracy, but a guide block clamped to the sander table also would work.)

With the bottom held firmly to the body, mark and drill four 1/16" holes ⅝" deep through the bottom and into the body's sides. Enlarge the holes in the bottom to 3/32", and then countersink them.

Attach the bottom with four #2 × ½" flathead brass wood screws. Sand the bottom edges flush with the sides, and then remove the bottom. To keep the bottle from turning inside the body, glue it to the bottom with hotmelt adhesive.

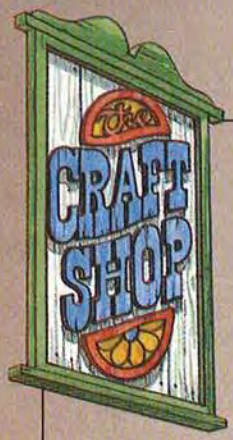
Apply a clear, durable finish (we used a wipe-on polyurethane product), and then install the bottom. Now, you're ready to fill the dispenser and pump your hand lotion in style.



Buying Guide

● **Bottle and dispenser.** Plastic bottle with screw-on pump-type dispenser, $4.98 for one set, or $6.50 for two sets, ppd in the United States. Include an index card or mailing label with your name and address typed or printed on it. Order from Ennis Mountain Woods, RFD 2, Box 222B, Afton, VA 22920.

Design: Ennis Mountain Woods; James R. Downing Photograph: Hopkins Associates Illustrations: Jamie Downing; Jim Stevenson



NOAH'S LOVABLE

When family and friends see this great Noah's Ark and animals, they'll think you worked for 40 days and 40 nights. But thanks to our easy, pattern-packed plans, you can tell them it took less time to make than a rainy afternoon. Or, you could just keep 'em guessing!

Print this article

You'll need these materials: *Build the ark with a 1×6"×4' pine board, a 12" length of 2×4, and a ¼" dowel at least one inch long. You'll need ¼" stock for the gangplank and the animals. Plane or resaw thicker stock to size. We used several wood species for the animals as indicated on the patterns.*

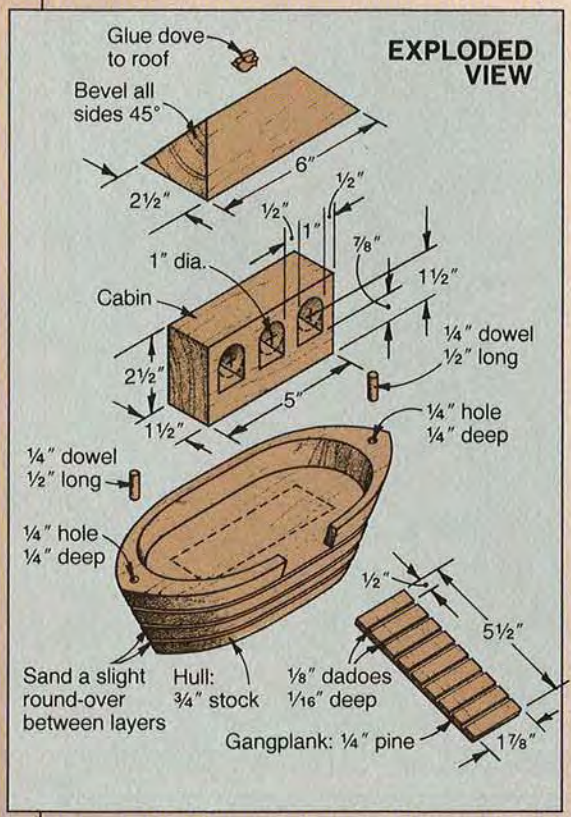
First, let's build the ark

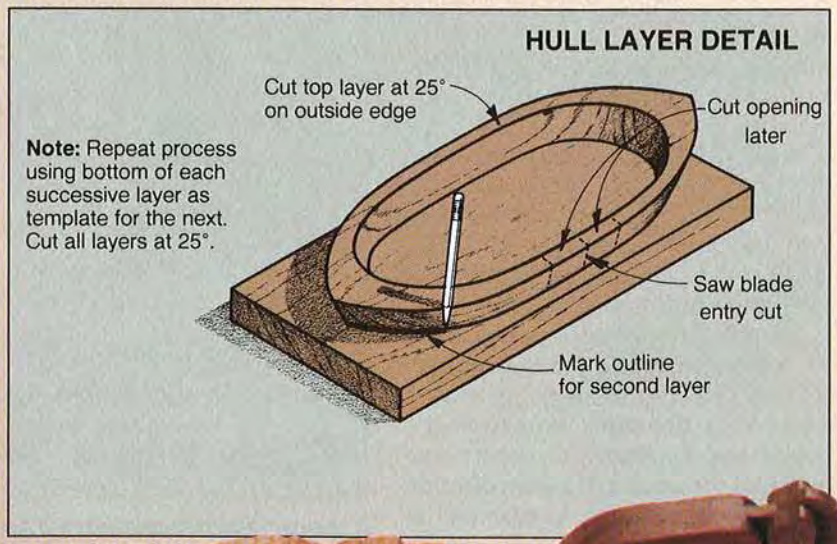
Cut four pieces of 1×6 pine 12" long. Now, make four photocopies of the full-sized hull quarter pattern on page 78. Scissor out the four sections, and then join them with cellophane tape to make a full-sized hull outline. Adhere the pattern to one of the hull pieces.

Next, tilt your bandsaw or scrollsaw table to 25°, and cut along the outside pattern line. Then, place the part you just cut with the narrow side down on top of another 1×6 piece. Trace the bottom outline as shown *below*, and cut. Make four layers total, tracing each from the previous layer.

Now, return to the top (largest) layer and saw along the inside pattern line, entering the interior cut at the midpoint of the left side. *Do not cut inside the other hull layers.*

Finally, set the bandsaw table to 0°, and cut the gangplank opening 1⅞" wide, as shown on the Exploded View drawing. Sand round-overs on the top and bottom edges of the hull layers (to create the grooved sides), apply glue, and clamp together. Once dry, drill a ¼" hole ¼" deep in each end where shown on the Exploded View drawing. Cut two pieces of ¼" dowel ½" long, apply glue, and insert.




HULL LAYER DETAIL
Cut top layer at 25° on outside edge
Cut opening later
Note: Repeat process using bottom of each successive layer as template for the next. Cut all layers at 25°.
Saw blade entry cut
Mark outline for second layer

ARK and a complement of friendly critters

Our animals have a clear finish, but you could cut them from pine and paint them.

Rip a 12" 2×4 to 2½". From this, cut a 5" length for the cabin, and a 6" length for the roof. Next, bore three 1"-diameter holes through the cabin piece where shown on the Exploded View drawing. Cut the window bottoms with the scrollsaw. Adjust the bandsaw or scrollsaw table to 45°, and bevel the sides and ends of the 6" length to make the roof.

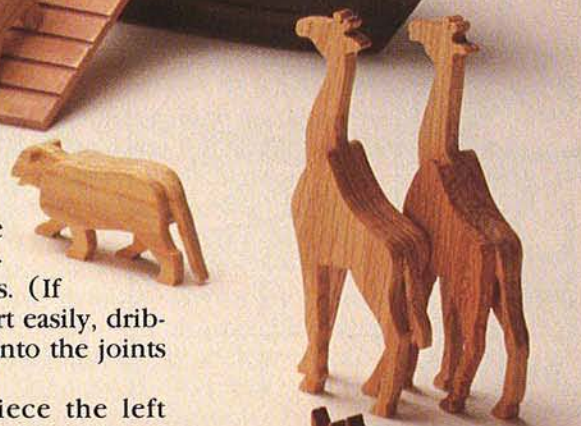
Saw ¼" stock to 1⅞×5½" for the gangplank. With a tablesaw, cut 1/16"-deep blade kerfs ⅛" wide, spaced ½" apart on one side.

Sand off saw marks, and sand slight round-overs on the cabin and roof corners. Stain the deck, cabin, and gangplank. Paint as shown in the photo, *above right*.

For an aged look, scuff the paint with sandpaper, sanding through to bare wood on some corners. Then, wipe with walnut stain. Now, glue together the hull, cabin, and roof.

And now, for the animals

Make two photocopies of each animal pattern, *next page*. For each, except the dove, cut three pieces of ¼"-thick stock to the dimensions shown on the pattern. Laminate matched sets temporarily with double-faced tape. Use small pieces of tape so you can easily separate the pieces later.

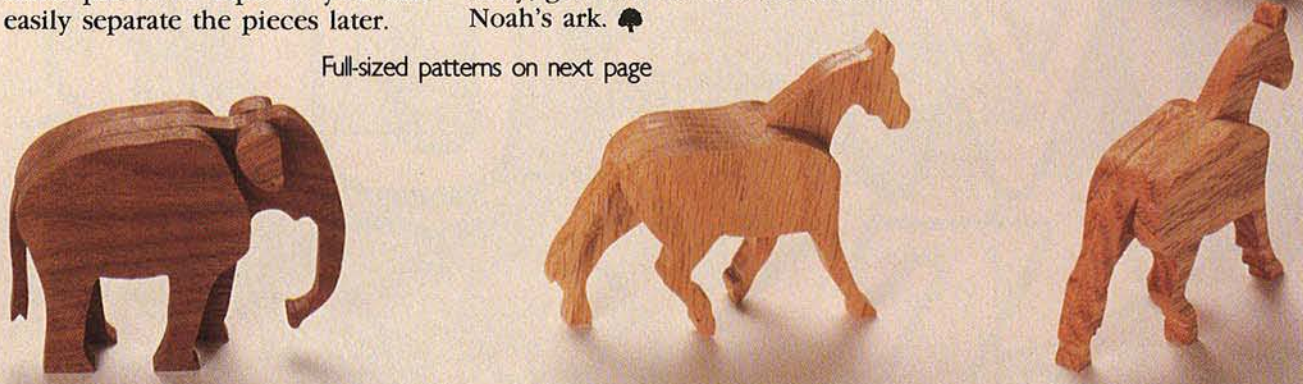


Adhere a pattern to its respective stack. Then, cut along the outermost line. Separate the three pieces. (If they don't come apart easily, dribble lacquer thinner into the joints to break the bond.)

Designate one piece the left side, one the right side, and one the center. Saw all legs off the *center* piece. Saw the head and tail from the *left* and *right* sides (but leave the tail on the crocodile's sides). Now, following the pattern lines, saw the extra legs off each side. Cut the elephant ears and tusks (we used pine for the tusks), and the lion ears. Cut the dove from a single thickness.

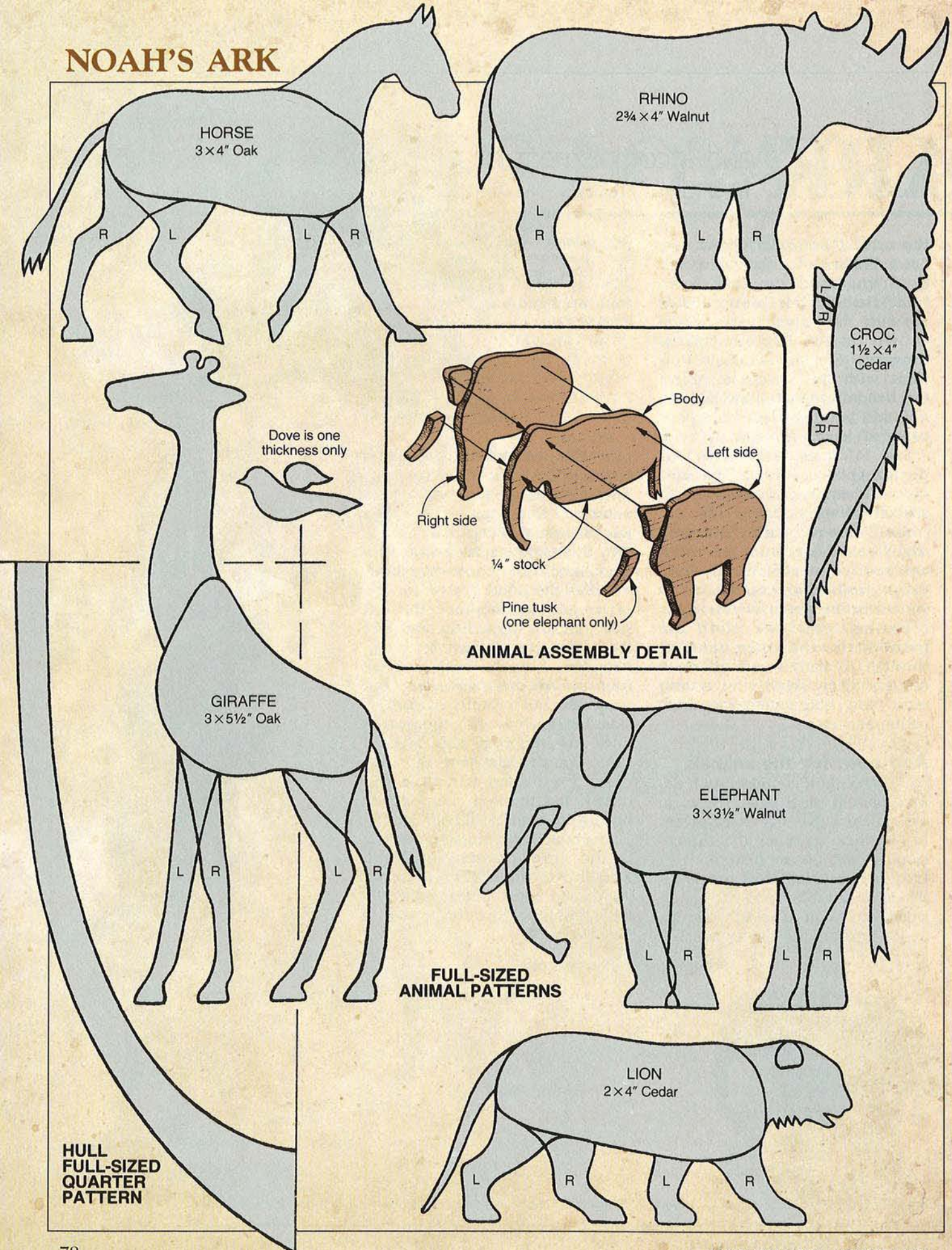
Assemble the animals, referring to the Animal Assembly detail. Round over the edges with sandpaper, and apply a clear finish. Finally, glue the dove to the roof of Noah's ark.

Full-sized patterns on next page



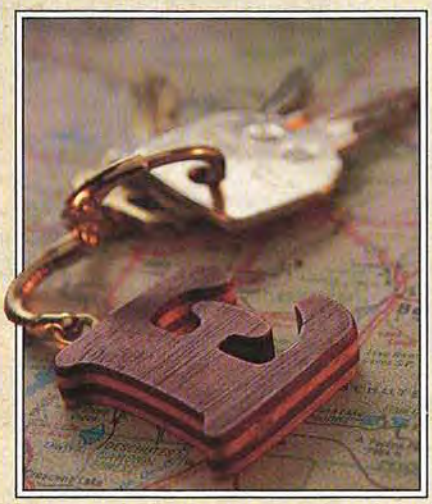
Project Design: Harlequin Crafts; James R. Downing Photograph: Hopkins Associates Illustrations: Jamie Downing; Jim Stevenson

NOAH'S ARK


HORSE
3×4″ Oak
R
L
L
R
RHINO
2¾×4″ Walnut
L
R
L
R
CROC
1½×4″
Cedar
L
R
Dove is one
thickness only
Body
Left side
Right side
¼″ stock
Pine tusk
(one elephant only)
ANIMAL ASSEMBLY DETAIL
GIRAFFE
3×5½″ Oak
L
R
L
R
ELEPHANT
3×3½″ Walnut
L
R
L
R
FULL-SIZED
ANIMAL PATTERNS
LION
2×4″ Cedar
L
R
L
R
HULL
FULL-SIZED
QUARTER
PATTERN

LETTER PERFECT KEY CHAINS

A great gift idea for friends from A to Z



That little plastic key chain from the insurance agent just isn't you, is it? Why not spend a few minutes with your scrollsaw, cutting your initial from laminated hardwoods? Then, make some more for gifts because everyone will want one.

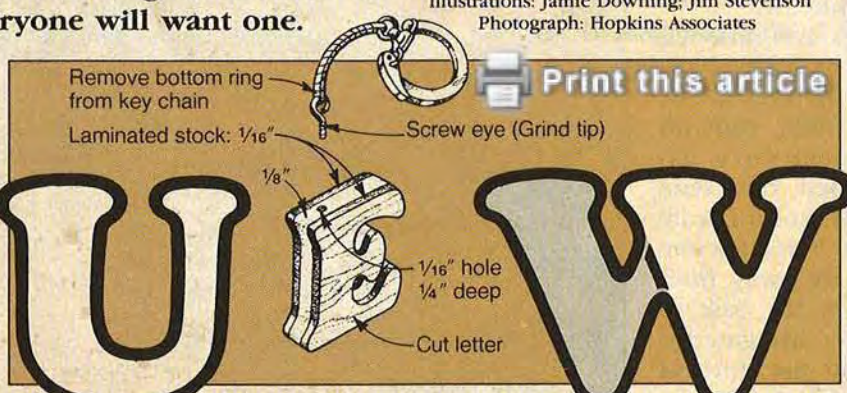
***Note:** You'll need thin stock to laminate for this project. Plane thicker stock to size, or resaw it using our jig on page 80.*

Cut your stock (see the drawing *below* for thicknesses) and glue up ¼ × 1½ × 6" laminations. Photocopy or trace the letter you need from the full-sized alphabet running around this page.

Adhere the letter to your lamination with spray adhesive. Scrollsaw any interior openings first, drilling start holes as needed. Then, cut around the outline. Sand and apply a clear finish.

Remove the bottom ring from a keychain assembly (available from craft suppliers). Open a size 216½ brass screw eye from the hardware store, and then install it on the chain end. Drill a 1/16" hole ¼" deep centered in the top edge of the letter. Coat the threads with epoxy, and insert the screw eye.

Illustrations: Jamie Downing; Jim Stevenson
Photograph: Hopkins Associates

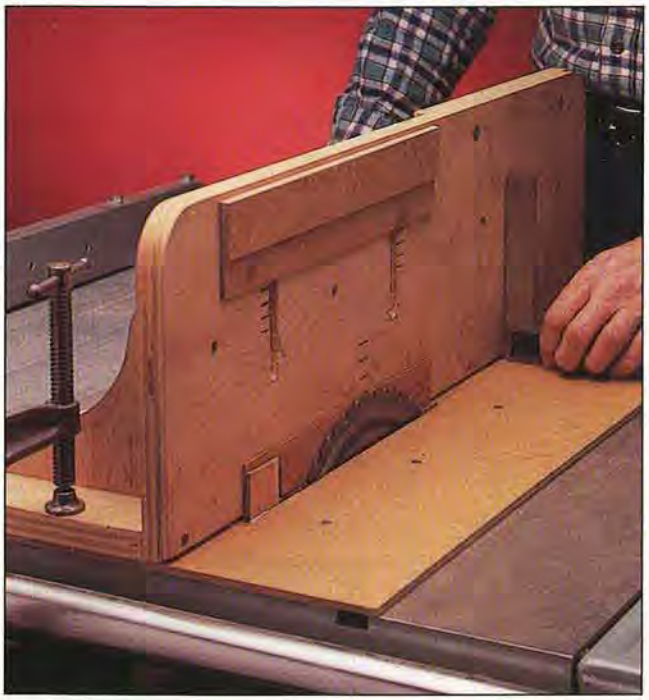


Print this article

Print this article

SUREFIRE RESAW JIG

SAFELY AND CONSISTENTLY CUTTING IT THIN



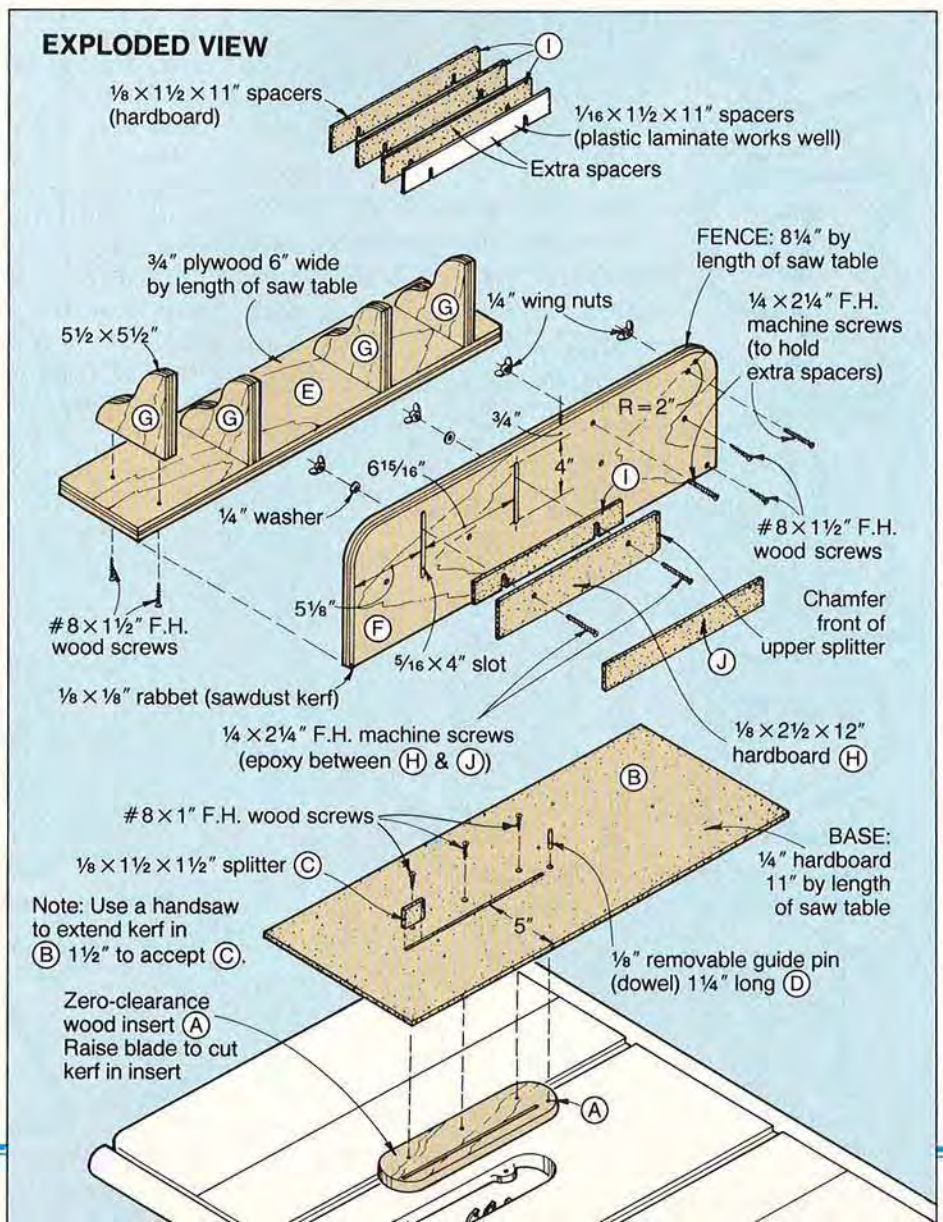
Thin stock for projects like our toboggan (see *page 66*), can be hard to find, but you can resaw your own easily and safely with the jig featured here. Build it to fit your saw table, and you'll use it again and again.

Construct the base and fence to form the jig

The jig shown has two basic components: the **base** and the **fence.** For the **base,** start by making a zero-clearance insert (A) of solid wood to replace your saw's metal insert. (The top of the insert must rest flush with the top of the table surface.) Cut the base (B) to size. Lower the insert into place, and position one edge of the base approximately 5" from the blade where shown on the drawing. Clamp the base to the tablesaw.

Start the tablesaw and raise the rotating blade to its highest setting (this creates the kerf in the insert and base); then, shut off the saw. (We settled on a 24-tooth, carbide-tipped rip blade as the best for resawing.) Locate countersunk pilot holes for the screws shown safely away from the kerf, and screw the base to the insert. Using a straightedge and pencil, extend the lines of the kerf in both directions.

With a handsaw, cut between the lines just marked to lengthen the kerf enough to accept the splitter (this device keeps the kerf of freshly cut stock from pinching on the blade). Also


EXPLODED VIEW
⅛ × 1½ × 11" spacers (hardboard)
I
1/16 × 1½ × 11" spacers (plastic laminate works well)
Extra spacers
¾" plywood 6" wide by length of saw table
5½ × 5½"
G
E
¼" wing nuts
FENCE: 8¼" by length of saw table
¼ × 2¼" F.H. machine screws (to hold extra spacers)
R = 2"
¾"
6 15/16"
4"
¼" washer
#8 × 1½" F.H. wood screws
5⅛"
F
#8 × 1½" F.H. wood screws
5/16 × 4" slot
Chamfer front of upper splitter
J
⅛ × ⅛" rabbet (sawdust kerf)
¼ × 2¼" F.H. machine screws (epoxy between H & J)
⅛ × 2½ × 12" hardboard H
B
#8 × 1" F.H. wood screws
⅛ × 1½ × 1½" splitter C
BASE: ¼" hardboard 11" by length of saw table
Note: Use a handsaw to extend kerf in B 1½" to accept C.
5"
⅛" removable guide pin (dowel) 1¼" long D
Zero-clearance wood insert A
Raise blade to cut kerf in insert
A

drill a ⅛" hole inside the marked lines on the base to accept the 1"-long removable dowel-guide pin. Cut the splitter (C) and guide pin (D) to size; epoxy the splitter in place.

To fabricate the **fence,** cut the horizontal support (E), upright (F), and the four support braces (G) to size. Locate and cut the 5/16" slots. Form the rabbet at the bottom edge of the upright, and radius its top two corners. Glue and screw these parts together, checking that the base and the upright meet at a 90° angle.

Cut the upper splitter parts (H, I, J) to size. Notch the spacers (I). Drill and countersink a pair of holes through part H to align with the slots in the upright (F). Epoxy a pair of ¼ × 2¼" machine screws between parts H and J. Then, drill and countersink the mounting holes, and epoxy a pair of ¼ × 2¼" machine screws to the upper back end of the upright where shown on the Exploded View drawing. You'll use this last pair of screws to form an easy-access storage rack for the spacers.

Readying the jig for resawing

Lightly clamp the jig to the tablesaw, and raise the blade about 1½" above the saw table. Using the appropriate number of spacers (in the case of the toboggan on *pages 66,* use one 1/16"-thick spacer), set the fence the desired distance from the blade as shown in the opening photo *left.* Use the spacer so that the fence is parallel with the front and back edges of the blade.

As shown in the intro photo, use a square to verify that the fence is perpendicular to the saw table. If you detect problems (be precise in your measurements), loosen the C-clamps slightly and shim as necessary.

Insert the appropriate number of spacers between the upper splitter and fence (for the toboggan strips use just one 1/16" spacer). Then, set up a feather board and kicker arrangement like the one shown in Photo A.

With the feather board snugged up against the stock and the blade raised to make a 1" cut, run the material through the saw as shown in Photo B. (For ease in cutting the toboggan runner strips, we raised the blade to 1 3/16" and cut the strips in two passes.)

Flip the stock end for end, lower the upper splitter so that it captures the upper portion of the material. Run the stock through again (same face against the fence) as shown in the photo. The splitter prevents the blade from gouging the already-sawn portion of the stock as the remainder of the material passes the saw blade.

***Note:** For wider boards, it's best to adopt a multiple-pass technique. Take a 1" bite from the material on the first two passes, and then raise the blade ½" each pass after that. After making one cut along each edge, put the guide pin in place. Sometimes, a kerf will close up immediately after passing over the blade; the pin will hold the kerf apart to prevent the kerf from binding on the blade.*

Project Design: James R. Downing
Photographs: Hopkins Associates
Illustrations: Kim Downing; Mike Henry

Anytime Anywhere Anywood

CURVED or STRAIGHT MOLDINGS

Both are yours with a W&H Molder/Planer

Thousands of professionals and serious woodworkers use our American-made cast iron molder/planers to produce smooth moldings, raised panels, crowns and curved molding.

In the shop or at the job site, W&H meets your needs every day with quick knife changeover and ultimate versatility with all kinds of wood.

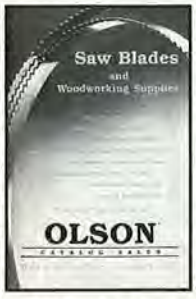
Over 40 years of experience supports our products with a 5 year warranty! Call or write today for our **FREE** information kit!

800-258-1380 (USA) 603-654-6828
FAX 603-654-5446

Williams & Hussey Machine Co., Inc.
Dept. 231JM
P.O. Box 1149 Wilton, NH 03086

W&H

Band Saw Blades
Scroll Saw Blades
SAVE UP TO 50%



Band Saw Owners...
Hard edge, flex back for general purpose sawing; NEW furniture band for cutting wood faster & smoother; and special thin gauge blades for bench top and 3 wheel saws. Welded to length or in 100' coils.

Scroll Saw Owners...
A huge selection of plain or pin end scroll saw blades; fret, spiral and jewelers (metal piercing) saw blades.

Send for **FREE** Catalog

Name_____

Address_____

City_____

State_____ Zip_____

OLSON CATALOG SALES
Dept WM, Route 6, Bethel, CT 06801
(203) 792-8622 Fax: 203-790-9832

SANTA STOP HERE!!

You can almost hear these kids giggling with anticipation! Their flashing red noses and STOP signs will halt Santa in his tracks. It's easy to transfer our FULL SIZE patterns to your 1/2" plywood. This special offer includes the patterns and hardware parts to make both projects. Hardware parts include two pairs of eyes, two complete wiring harnesses including red blinking bulbs, two white pom poms and two 9" STOP signs. All you add is the plywood and paint. **Order #9906 Santa Stop Here Kids Plan and Hardware Parts Package for $27.92. (Includes shipping to 48 continental states.)** MN residents add $1.38 sales tax. Mail your check today. **Credit card customers call Toll Free 1-800-441-9870.** Absolute 100% money-back guarantee.

MORE PLANS
See hundreds of additional plans. Order our 72-page catalog for only $1 or receive catalog FREE with order.

MEISEL HARDWARE SPECIALTIES
P.O. BOX 70 W10 X MOUND, MN 55364

RIP SAW

The Portable Sawmill.

The **"affordable portable"** one man band sawmill. Weighs only 45 lbs. Cuts 20" diameter logs into lumber. Minimum 1/8" to maximum 9" thickness.

Write or call for free brochure.

Better Built CORPORATION

(508) 657-5636
845 Woburn Street, Dept.W, Wilmington, MA 01887

ANNOUNCING...

WINNERS APLENTY IN THE 1991 BUILD-A-TOY CONTEST

From the best use of a router to the home hobbyist's top finish, here's the complete list.

CHUG-A-CHUG-A-CHOO-CHOO

Best train by a professional was claimed by Carl Boop, Levittown, Pa., for his old-time steam train.

STUDENT DIVISION

Grand Prize ($2,000 Kity K-5 machine): Josh Escobedo, Pioche, Nev.
First Prize ($1,500 Black & Decker merchandise): John Hicks, Westlake Village, Calif.
Second Prize ($579 Jet 14" bandsaw): Brad Noble, Hamilton, Ohio.
Third Prize ($500 merchandise, American Tool Cos.): Todd Journey, Newark, Ohio.
Fourth Prize ($250 merchandise, Industrial Abrasives): (tie) Michael Bishop and Tony Henry, Newark, Ohio.

HOME-HOBBYIST DIVISION

Grand Prize ($2,500 Delta merchandise): Larry J. Weaver, Petersburg, W. Va.
First Prize ($1,600 Shopsmith Mark V): Richard J. Zichos, Pasadena, Md.
Second Prize ($500 Grizzly merchandise): Larry Tkaczyk, Charlotte, Mich.
Third Prize ($500 Lobo merchandise): Bob Hill, Oelwein, Iowa
Fourth Prize ($250 Leichtung merchandise): Oswald Dobat, Ferndale, Mich.

PROFESSIONAL DIVISION

Grand Prize ($2,000 Freud merchandise): Mike Jagielo, Almond, Wis.
First Prize ($1,000 AEG merchandise): Neil Seely, Rochester, N.Y.
Second Prize ($500 Skil merchandise): Steven A. Bruni, Fort Madison, Iowa
Third Prize ($400 Wilke BW1-P planer): Daniel F. Sims, Pendergrass, Ga.
Fourth Prize ($348 Milwaukee electric 4" belt sander): Donald J. Polito, Hawthorne, Calif.

SPECIAL CITATIONS

BEST USE OF ROUTER

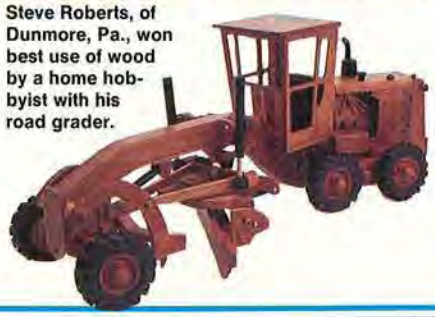
Student (AmMax scrollsaw): Casey Vosen, Lewiston, Mont., train.
Home hobbyist ($1,000 Porter Cable merchandise): B.J. Dowler, Phoenix, Ariz., fire truck.
Professional ($1,000 Ryobi merchandise): Phillip Peck, Montague, Calif., push-button telephone.

BEST USE OF WOOD

Student (Turning squares, Adam's Wood Products; $100 Constantine's merchandise): Josh Escobedo, Pioche, Nev., car transport.
Home hobbyist (14" RBI scrollsaw): Steve Roberts, Dunmore, Pa., road grader.
Professional ($500 Makita merchan-

PUTT-PUTT-PUTT

Steve Roberts, of Dunmore, Pa., won best use of wood by a home hobbyist with his road grader.



Print this article

dise): Joseph Pasquito, Lawrenceville, N.J., jet airplane.

BEST CARVED TOY

Student: No winner

Home hobbyist ($500 Dremel merchandise): Sylvia Adair Maker, Windsor, Vt., clown music box.

Professional ($500 Dremel merchandise): Robert C. Benson, Tyler, Texas, boot rocker.

BEST FINISH

Student ($1,000 Deft merchandise): Joint student project of Octavio Chavez, Mike Choi, Paul Farrugia, Matt Manley, Craig Sandoval, Richard Segovia, Jeff Wetzstein, Robert Wong, Downey, Calif., jointed teddy bear.

Home hobbyist ($1,000 Minwax/Watco merchandise): Brian Rebella, Mellen, Wis., bulldozer.

Professional ($500 Dremel merchandise): Steven A. Bruni, Fort Madison, Iowa, helicopter.

BEST TRUCK

Student ($100 membership How-to Book Club and antique car plans, Toys and Joys): Brad Noble, Hamilton, Ohio, fire truck.

Home hobbyist ($500 Meisel merchandise, Dollar Trading carving set): Frank W. Pickett, Johnson City, Tenn., semi-truck.

Professional (Craftsman Wood Service turning squares and Brandmark branding iron): Henry J. Gorczynski, Batavia, N.Y., cement truck.

CLANG-CLANG-CLANG

B.J. Dowler, of Phoenix, landed best use of a router as a home hobbyist with this fire truck.

BEST CAR

Student ($100 Constantine's merchandise): Joint project of Steve Smyers and Dan Loper, Newark, Ohio, race car.

Home hobbyist (hardwoods from Berea Hardwoods): Mark Canales, Gansevoort, N.Y., Indy race car.

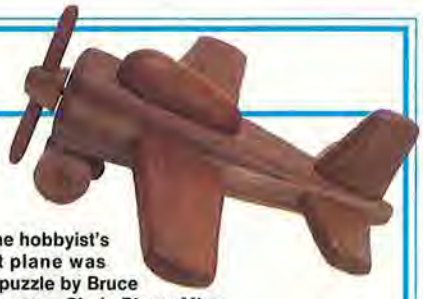
Professional (Plans from Furniture Design): Lewis R. Dow, Apollo Beach, Fla., car with spare.

BEST PULL TOY

Student (DML 10" carbide-tipped blade): Stephen Forman, E. Amherst, N.Y., road hugger.

Home hobbyist (Formby's gift set): Kris Kransberg, Tavernier, Fla., swimming fish.

Professional (Timbers Woodworking



Home hobbyist's best plane was this puzzle by Bruce Stevenson, Circle Pines, Minn.

VAR-O-O-O-O-M

gift certificate): Mike Jagielo, Almond, Wis., lady bug.

BEST TRAIN

Student (Rodale woodworking books): John Hopp-Ventres, Fairfield, N.J., steam engine.

Home hobbyist ($250 in power tools, Seven Corners): Richard J. Zichos, Pasadena, Md., passenger train.

Professional ($100 membership in How-To Book Club): Carl Boop, Levittown, Pa., engine and Pullmans.

BEST BANK

Student (Formby's gift set): Tina Petzold, Ontario, Ore., see-through bank.

Home hobbyist (Rip Straight from Fisher Hill): Robert W. Sanders, St. Marys, Ga., Mack truck.

Professional (DML 10" carbide-tipped blade): Michael Watters, Saginaw, Mich., boat.

BEST AIRPLANE

Student (Nova Tool branding iron): Bill George, Hamilton, Ohio, maple biplane.

Home hobbyist (Blueprints from Accents in Pine): Bruce Stevenson, Circle Pines, Minn., puzzle plane.

Professional ($100 Constantine's merchandise): Dan Shuler, Jetmore, Kan., maple monoplane.

GREATEST NUMBER OF TOY ENTRIES

Student (Paragauge from Accuset Tool and $100 sandpaper from Econ Abrasives): John Hopp-Ventres, Fairfield, N.J. (6)

Home hobbyist ($100 Woodworkers Supply Corp. gift certificate): Robert D. Sylvain, Granby, Conn. (27)

Professional (8" fine whetstone, Diamond Machining Technology): Randall E. Vanover, No. Kesville, Va. (6)

BEST BOAT

Student (Router insert, Tarheel Fling): John Hopp-Ventres, Fairfield, N.J., sailboat.

Home hobbyist (Rip Straight from Fisher Hill): Harold Geiselman, Canton, Ohio, Noah's ark.

Professional (Penn State variable-speed scrollsaw): William Bruck, Hamilton, Ohio, pontoon and four-wheeler.

BEST PUZZLE

Student (Thumb piano, St. Croix Kits): Rick Zwart, Crestwood, Ill., mountain.

Home hobbyist (Master Set, MLCS): Cynthia B. House, Arlington Heights, Ill., town.

Professional (20 sq. ft. of walnut, Hardwoods of Illinois): Harold A. Rupert, Jr., Pueblo, Colo., train.

FREE CATALOG

Send today for your **FREE** copy of our 68 page full-color catalog. You'll find the best prices for over 3,000 brand-name products. Included are power tools and accessories, hand tools, screws, hardware, wood components, plans, how-to books, and much more.

Trend-lines®

Discount Woodworking Tools and Supplies

To order your FREE catalog, just fill out the coupon below and mail it to:

Trend-lines
Dept. WD101
375 Beacham St.
Chelsea, MA 02150

Name _____

Address _____

City _____

State _____ Zip _____

DEPT. WD101

Van Dyke's

Presents a Catalog

with supplies for upholstery, antique restoration, wood working, caning, brass hardware, carvings and many related trades!

36 Years in Creative Arts & Trades

Many Hard-To-Find Items!

SEND $1.00 FOR CATALOG TO:

Van Dyke's Restorers

Dept. D55 · Woonsocket, SD 57385

Cradle Plans

You can easily build this classic cradle which is sure to become a family heirloom. Available in two sizes: Baby & Doll size.

72 pg. catalog free with order

Two Cradle Plans
One for Babies
One for Dolls

Baby size Plan (21 x 35) **$11.50**
Spindle Kit with Pivots **$30.25**
Doll size Plan (10 x 18) **$5.25**
Spindle Kit with Pivots **$12.95**

M/C Visa orders call toll-free 1-800-292-8296

Frt. 48 States $3.50. AK,HI add 25% of order. NY add tax. Canada add 50%. Use Visa/MC or M.O. in U.S. funds. Min. order is $15.00. Catalog $1.00 or sent FREE with order.

ARMOR, Box 445-E, East Northport, NY 11731

ASK WOOD

Whether your woodworker's license reads "Beginner," "Intermediate," or "Advanced," you're bound to have a few questions about your favorite hobby. By consulting our staff and outside experts, you can get the answers you need. Send your questions to:

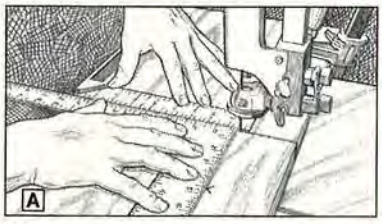
Ask *WOOD*
Better Homes and Gardens®
***WOOD*® magazine**
P.O. Box 11454
Des Moines, IA 50336-1454

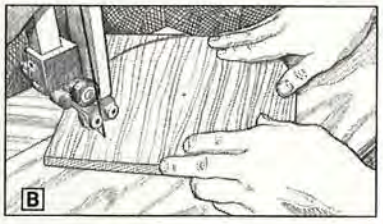
Going around in circles on your bandsaw

Print this article

What's the secret for cutting a perfectly round circle in wood—something about 6″—on your bandsaw? Do you always have to follow a line, and then sand? I'm making a carousel which requires cutting a 4″- and a 6″-round piece out of 1″ stock. Thanks for any help.

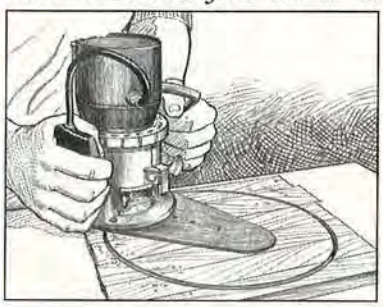
—Henry R. Krygsheld, Lansing, Ill.





Henry, do we have a jig for you! It consists simply of a piece of plywood scrap with a small nail sticking up through its center about ¼″. In the bottom of the intended round cutout, drill a center hole the same diameter as the nail. Place the workpiece on the nail, and secure the plywood jig to the bandsaw table, making sure the distance between the center of the circle and blade equals your circle's radius. Now, using a ⅛″ blade, cut out the circle by rotating the workpiece. (See Drawing B*) Note that we laid out our circle along the edge of the workpiece to create a starting place. After cutting, sand the edge smooth to remove splinters and saw marks.*

If you want to cut perfect circles and don't care what machine you do it with, consider using a router and a trammel base like the one shown left. *A straight bit works best for this operation. You can go with either a nail or dowel pin as the pivot point for the base piece.*



Continued on page 86

WOOD® Magazine's Fourth Annual

Lt. Mike Snyder of U.S. Marine Corps with young child holding handcrafted wooden toy donated by WOOD Magazine.

BUILD-A-TOY™ Competition

1992 RULES

1. Make projects no larger than 2' X 2' X 2'. The primary material should be wood, but may incorporate other materials.

2. Please follow Consumer Product Safety Commission guidelines: nontoxic wood finishes only; no parts smaller than 1 1/4" square on toys for children under three years of age; no sharp corners or points; pull strings longer than 12" should not have beads or other attachments that could tangle and form a loop.

3. Entries must be received by February 1, 1992. All entries must be postpaid; collect entries will be refused. Attach an entry label, photocopy of an entry label or a 3" x 5" card with your name and address to each toy.

4. Woodworkers who build toys from existing plans will be eligible for Special Citation prizes only. Woodworkers who build their own original designs will be eligible for design and citation prizes. Only students will be eligible for the Student Special Entry Project. Only home hobbyists and professionals will be eligible for the Home Hobbyist/Professional Project category. No purchase necessary. To receive a copy of a toy plan from *All-Time Best Toy Projects*, please send a self-addressed stamped envelope to: WOOD® Magazine, c/o Eileen Sullivan, 750 Third Avenue, New York, NY 10017.

5. Entry constitutes permission to use winner's name and photograph for promotional purposes. Employees and family members of Meredith Corporation, their affiliates and subsidiaries are ineligible. Void in Quebec.

6. Winners will be selected and notified by mail on or about April 15, 1992, and will receive the prize directly from the manufacturer/distributor. For a list of winners, send a separate, self-addressed stamped envelope to BUILD-A-TOY, 1912 Grand Avenue, Des Moines, IA 50309-3379.

7. Meredith Corporation will donate all entries to the U.S. Marine Corps Reserve Toys-for-Tots program.

8. **For woodworkers who enter their toy as an original design:** Toy must be your own original design. A different approach to an existing toy would qualify. Please do not enter toys with only subtle changes from published patterns.

9. A panel of representatives from the U.S. Marine Corps Reserve, Meredith Corporation and woodworking experts will judge the toys on a child's appeal, craftsmanship, originality, and durability. The panel's decision will be final.

10. Professional woodworkers include woodworking teachers and anyone earning income by selling wooden items.

WOOD® Magazine announces:

1992 BUILD-A-TOY™

Fourth Annual Contest to benefit children through Toys-for-Tots.

ENTRY DEADLINE: FEBRUARY 1, 1992
Great prizes for every skill level!
Prizes for Original Designs and Built from Plans!

We're proud to invite woodworkers of every age and skill level to participate in our Fourth Annual BUILD-A-TOY Contest.

Design prizes will be awarded for toys built from original plans. **Several of these toys will be chosen for future editorial features in WOOD!** Special Citation prizes are open to all woodworkers who send us a toy.

BUILD-A-TOY is the best way we know of for woodworkers to get the recognition they deserve for great craftsmanship. And the toys you submit will be contributed to the Toys-for-Tots program of the U.S. Marine Corps Reserve and distributed to underprivileged children this Christmas!

Enter our BUILD-A-TOY contest; help promote the wonderful craft of woodworking, win some terrific prizes, and make a child very happy this holiday season. Please join us!

Above top: *Editor and Publisher of WOOD Magazine with children from St. Barbara's Head Start Program at a special BUILD-A-TOY reception in New York City, December 1990.*

Above bottom: *Award-winning BUILD-A-TOY entries on display at the Museum of American Folk Art, December 1990.*

COMPETITION PRIZES AND CATEGORIES

	STUDENT (K-12):	HOME HOBBYIST:	PROFESSIONAL:
DESIGN PRIZES:	**These 12 categories are open to original designs only.**		
Grand Prize	Black & Decker: $1,000 in merchandise	Delta: $2,500 in merchandise	AEG: $1,000 in merchandise
First Prize	Grizzly: $500 in merchandise	Shopsmith: Mark V ($1,600 value)	Porter Cable: $1,000 in merchandise
Second Prize	Skil: $500 in merchandise	Ryobi: $1,000 in merchandise	RBI: 16" variable speed Scrollsaw ($750 value)
Third Prize	American Tool Co.: $500 in merchandise	Lobo: $500 in merchandise	Wilke: BWI-P Planer ($400 value)
SPECIAL CITATIONS:	**These 36 categories are open to both original and existing designs.**		
Best use of Wood	Adams Wood Products: Assortment of Turning Squares	Woodworkers Supply Corp.: $100 gift certificate.	Makita: $500 in merchandise
Best Carved Toy	Dremel: $500 in merchandise	Dremel: $500 in merchandise	Dremel: $500 in merchandise
Best Finish	Deft: $1,000 in merchandise	Minwax: $500 in merchandise	Minwax: $500 in merchandise
Best Truck	Klockit: $100 in merchandise	Meisel: $500 in merchandise	Brandmark: Branding Iron
Best Car	Constantine: $100 in merchandise	Toys & Joys: Antique Car Plans	Furniture Designs, Inc.: Furniture Plans
Best Pull Toy	DML: 10" Carbide-Tipped Blade	How-To Book Club: $100 gift certificate	Woodmaster: $100 gift certificate
Best Train	Rodale: Woodworking Books	Seven Corners: $250 in Power Tools	Milwaukee Electric: 4" Belt Sander with Bag ($348 value)
Best Bank	Klockit: $100 in merchandise	Formby's: 3 Gift Sets	DML: 10" Carbide-Tipped Blade
Best Airplane	Geneva Specialties: $100 in merchandise	Accents in Pine: Set/Blueprints	Industrial Abrasives: $250 in merchandise
Most Number of Toy Entries	Accuset Tool: ParaGauge	Woodworkers Book Club: $100 membership	Econ Abrasives: $100/Sandpaper
Best Cradle	Geneva Specialties: $100 in merchandise	Sears Craftsman: 20" Scrollsaw ($400 value)	Penn State: Variable Speed Scrollsaw
Best Puzzle	St. Croix Kits: Thumb Piano	MLCS: Master Set	Formby's: 2 Gift Sets
STUDENT SPECIAL ENTRY PROJECT:	**This category is open to student woodworkers who build a toy plane from plans found on page 58.**		
Best Toy Plane	Woodworkers Book Club: $100 membership		
HOME HOBBYIST/PROFESSIONAL PROJECT:	**This category is open to home hobbyists or professional woodworkers who build a toy from plans in WOOD magazine's new book, *All-Time Best Toy Projects*. See ad on inside back cover.**		
Best Toy Project	Leichtung: $250 in merchandise		

WOOD® Magazine's 1992 BUILD-A-TOY Competition

There is no limit to the number of entries. Please provide the following information for each toy submitted.

My entry is: ❑ Original design* ❑ Built from plans ❑ Special Entry Project

My skill level is: ❑ Student ❑ Home Hobbyist ❑ Professional

*For Original Design entries: I certify that I have designed and built this toy myself. Should my entry win, I agree to cooperate with WOOD Magazine to supply builder's notes and a bill of materials for publication.

Signature_____ Date _____

Name _____

Address _____

City _____ State _____ ZIP _____

Phone (____)_____

Send toys to: 1992 BUILD-A-TOY, WOOD Magazine, 1912 Grand Avenue, Des Moines, IA 50309-3379

1992 BUILD-A-TOY ENTRY DEADLINE: FEBRUARY 1, 1992.

ASK WOOD

Continued from page 84

Wanted: a slow glue for longer working time

Do you know of any good slow-drying wood glues? These new aliphatic resin glues dry too fast for large projects. In fact, they dry so fast that it's impossible to square the item when you assemble it.

If you don't believe me, just take two pieces of scrap pine, apply a thin coat on one, press the pieces together, and in less than three minutes you won't be able to pry the pieces apart.

Applying heavy coats works somewhat better, but you always end up with a mess, and hide glue is too thick for use with biscuit joints.

—Paul Ondras, South Windsor, Conn.

Paul, white (polyvinyl) glue, available at hardware stores and homecenters, gives you the set time you're looking for—30 minutes. It dries by losing water to the wood and air, providing a strong joint under normal conditions. Makers recommend that you avoid stressing white-glue joints for at least 24 hours. To maintain joints for years to come, keep them away from moisture and heat.

Safe finishes for wood toys

I'm looking for advice on locating nontoxic finishes (paints and stains) for wooden toys that I make for my children. Specifically, I'm seeking information on stains in primary colors that let the natural wood show through, and paints that produce bold bright colors.

Am I right that water-soluble aniline dyes bring out wood's natural beauty? Could you please supply brand names of the dyes and paints you prefer for children's toys? Thank you for your help.

—Cy Stockhoff, Albuquerque, N.M.

Cy, once finishes dry on a project—such as a toy—children can come in contact with it without any threat to health. Today, commonly available paints no longer include lead or other heavy metals among their ingredients. Of course, while in the liquid or curing states, these same finishes should remain out of reach of children because the paint's evaporating vehicle may prove harmful.

To locate the most common paint finishes used on toys—acrylics and enamels—you need go no farther than your local hardware stores and home centers. The labels on many of these products use the word "nontoxic" to describe the contents.

Regarding aniline dyes—these should serve your needs for showing grain and color. For a clear dull look, go with either Rockler's or Behlen's Salad Bowl Finish. If you would like to mail-order nontoxic finishes, try calling Cherry Tree Toys, Inc. at 614/484-4363 and ask for their catalog.

Why wipe up stain?

Most staining instructions say wipe or brush on [the stain], wait a prescribed number of minutes, and then wipe off. Why does the stain have to be wiped off? And secondly, what's the difference between paint and primer?

—Rudy Nerat, Chula Vista, Calif.

Rudy, beginning with your first question, you need to remove any stain residue to create an color-even finish. Leaving extra stain could result in blotching. Keep in mind, also, that you can always reapply more stain for a deeper, darker look.

Turning to your second question, a primer is the first paint coat applied to a surface. It functions as a filler to cover up slight imperfections while guaranteeing a solid color finish and double protection against grain show-through. Sanded and wiped clean, it provides a terrific surface on which to apply a smooth finish coat.

You can buy paint sealers that serve strictly as primers, or use varnish or lacquers. With many woodworking projects, you can apply the same paint for the finish coat and the primer. Often, you'll want to thin the prime coat for best adhesion to the original surface.

Seeking software for furniture design

I would like to design my own furniture on computer. However, all the software drawing packages I'm familiar with do not draw or design furniture. Do you know of any specific woodworker's software suitable to this type of design work? I have an IBM PS-2 386 computer.

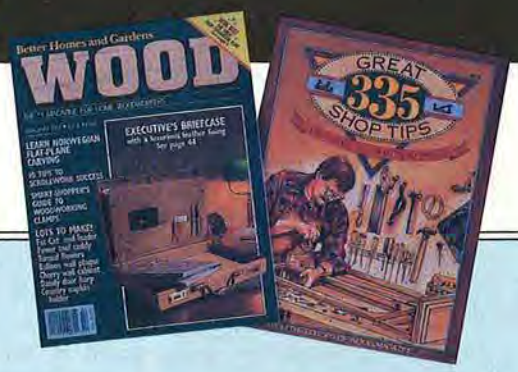
—Ken Haynes, Green River, Wyo.

Ken, we recently purchased a PC and compatible software for our design editor, Jim Downing, to do exactly what you seem to want. In his search for software, Jim found generalized CAD (computer-assisted design) drawing programs for use in designing anything from airplane cockpits to entire houses. He found nothing geared specifically to woodworking. In spite of this, he purchased DesignCAD 2-D and DesignCAD 3-D by American Small Business Computers, Inc. and says he's happy with the softwares' performance and drawing features. For more information, call 918/825-4844.

Continued on page 88

BACK ISSUE SALE

While supplies last, you can order the issues listed below. We will process orders on a first-come, first-serve basis, and when the magazines are gone, that's it.



WOOD® magazine

#7 Surface sander, coffee table, hall shelf, magazine rack, doll furniture, classic radio, carving tools, resawing jig.

#8 Coat-tree, snack tray, jeep, desk set, charm bears, necklace, sled, mallets, scrollsaws.

#9 Dining table, clocks, jewelry box, multi-machine, Japanese handtools, furniture stripping, seating standards.

#10 Parsons table, dining chair, lantern, ceiling fixture, wren house, airplane, air compressors, plastic laminates.

#12 Scrollsaw, breakfast tray, tie rack, tow truck, sandpaper storage, parrot magnets, bookends, power miter saws.

#13 Cedar chest, kid's table and chairs, mug rack, kitchen cabinet standards, jewelry case, drum-sanding, planers.

#17 Outdoor settee, dining table, carving board, plane rack, template and pin routing, radial-arm saws, dust control.

#19 Cradle, bird feeder, kid's mirror, turned clock and vase, notepad holder, tool chest, power carvers, dovetail jigs.

#20 Mantel clock, wine rack, candle holder, money clip and key chain, doll stroller, hand mirror, bulldozer, buckles.

#21 Barrister's bookcase, file cabinet, picture frame, letter opener, bandsawed boxes, spice jars, plunge routers.

#22 Tall clock, onlay vase and table, blade-height gauge, teddy bear clock, swan necklace, clothes rack.

#23 Patio set, 2 stave-bowls, pantograph board, turned earrings, playhouse, plate joiners, chair caning, diamond stones.

#24 Outdoor planters, kid's trucks, 3 cutting boards, homemade sawhorse, drill-press techniques, wood mosaics.

#25 Curio cabinet, glue caddy, kid's wheelbarrow, zoo carousel, rolling pin, key keeper, oval marker, layout tools.

#26 Ornaments, yo-yo, wall clock, baja buggy, notepad holder, depth gauge, cribbage board, inlay tray, vacuums.

#27 Country bench and cabinet, floor lamp, box-joint jig, recipe-card box, trucks, perfume decanter, relief carving.

#28 Trestle table, finish scraper, birdhouse, plant stand, stack-laminated bowls, stationary belt sanders.

#29 Entertainment center, low-voltage lighting, train whistle, bud vase, napkin holder, parrot mobile, tops.

#30 Shaker chair, doll cradle, rod rack, strip sander, carved whale, portable belt sander, cabinet cleanup, treated wood.

#31 Woody car, rip fence, waddling duck, woven basket, candle holder, tabletop frame, jointers, working small woods.

#32 Tambour desk, oak mirror, bookends, tabletop easel, recipe-card holder, biplane, carved angel, tablesaws.

#33 Router table, dry sink, desert landscape, FAT CAT trucks, turned bracelets, router tricks, microwaved bowls.

#34 Bowed psaltery, dollhouse, tablesaw base, framed hummingbird, carved bluegill, sandblasting, planers.

#35 Oak settee, monster truck, spoon rack, handscrew clamps, toy wheels, tabletop finish.

#36 Sofa table, candle box, candlestand, country clock, country finishes, electric drills, bird feeder, toy excavator.

#37 Workbench, toy tractor, try square, weed pots, scrollsawed necklace, carved coyote, woodworking vises.

#38 Tablesaws, circular saws, bandsaws, scrollsaws, planers, jointers, sanders, lathes, drill presses, routers.

#39 Block castle, card holder, jewelry box, cutting board, sleigh, tape and disc organizers, shapers, Santa carving.

#40 Canvasback carving, moldings, gun case, oval carrier, center finder, vase, shadowbox, relief puzzle.

#41 Chip-carved farmer, front-end loader, briefcase, tool transport, plaque, napkin holder, door harp, wall cabinet.

#42 Cigar-store Indian, spice cabinet, outdoor chairs, cordless drills, domed display, welcome sign, birdhouse, clock.

#43 Dust collection, mobile, wildlife scene, outdoor table, eggs, cutting board, barnyard cutouts, cosmetic mirror.

#44 Intarsia cat, calendar/clock, Southwest tables, carved plaque, toy toolbox, turned pens, weather vane.

335 GREAT SHOP TIPS
Illustrated collection of better, safer, and faster ways of working with wood in your shop.

HERE'S HOW TO PLACE YOUR ORDER

1) Fill out the form at right, indicating which issues you want to purchase.

2) Send the order form to:

***WOOD* Back-Issue Sale**
P.O. Box 11454
Des Moines, IA 50336-1454

NOTE: Supplies are limited, so we'd prefer that you purchase your magazines by credit card (MasterCard, VISA). This allows us to charge you only for those magazines we have in stock at the time we receive your order. We also will accept checks, payable to *WOOD* Back Issue Sale, but this may increase the processing time on our end. Allow 4–6 weeks for delivery. Phone credit-card orders: 800/678-2666.

Name _____

Address _____

City _____ State _____

Zip _____ Daytime Phone _____

☐ VISA ☐ MasterCard Exp. Date _____

Credit Card # _____

Signature _____

Single issues @ $4.95 ppd. For foreign orders, please add $1 per issue.

***WOOD* magazine**

☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 12 ☐ 13 ☐ 17 ☐ 19 ☐ 20 ☐ 21 ☐ 22

☐ 23 ☐ 24 ☐ 25 ☐ 26 ☐ 27 ☐ 28 ☐ 29 ☐ 30 ☐ 31 ☐ 32 ☐ 33 ☐ 34 ☐ 35

☐ 36 ☐ 37 ☐ 38 ☐ 39 ☐ 40 ☐ 41 ☐ 42 ☐ 43 ☐ 44

335 GREAT SHOP TIPS ☐

ASK WOOD

Continued from page 86

Those bleeding oil-based finishes

I finish all of my red oak projects using medium walnut Watco Danish Oil, being careful to follow all label instructions. My basement shop is both warm and dry. However, the oak continues to "bleed" drops of oil for several days after wiping it dry in accordance with the instructions. In fact, even when it appears dry after wiping with a cloth or towel, still more drips appear on the surface when I turn the wood over or stand it on end. I buy dried oak from a reputable dealer in the area. Needless to say, this wiping adds a great deal of time and effort on my part to complete a project. Do you have any ideas?

—Rob Carter, Lynnwood, Wash.

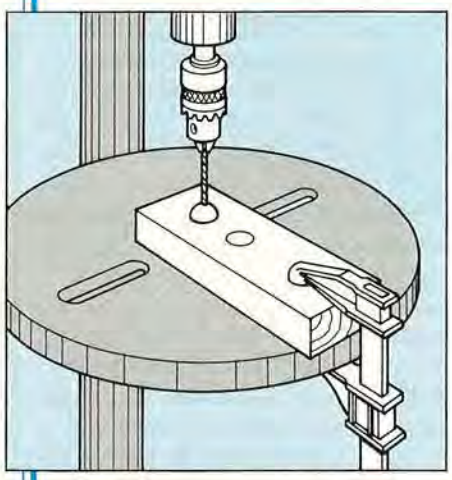
Rob, we called Deborah Sherry, the technical service manager at Minwax (the folks who own Watco), and read her your letter. Deborah calls your problem "bleedback," and says that it occurs typically "with red oak, but on only one out of 20 boards." Various theories on this condition link it to the solids levels in the stain, to microorganisms, or to dirt embedded in the wood. Here's how to deal with it.

"Wipe the (finished) piece until the oozing stops," advises Deborah. "If pimples appear, use mineral spirits or Minwax's Antique Refinisher and steel wool to dissolve them. Then, go over the affected area with a cloth." For more on the problem, call Minwax's help line at 800/647-9365.

Drilling centered holes in wood balls

I have been making door harps using wood clapper balls and dowels, but I have a problem making the straight holes in the balls with my drill press. Is there some kind of jig I can make to help me out?

—L. J. Anderson, Wisconsin Rapids, Wis.



Yes, L. J., we have such a jig. (See left.*) To make it, first clamp a block of wood to your drill-press table. Then, take a spade bit that's ⅛" to 1/16" less than the diameter of the wood ball you intend to drill, and bore a hole into the wood block. Next, change bits to the size of hole needed in the ball, insert the ball snugly in the hole just drilled, and bore into the ball to the desired diameter and depth.*

Sad over sap

For a hobby, I cut and make woodcraft projects. My problem lies in the discoloring that occurs from oozing sap after I finish my projects with acrylic paint and varnish. I use only pine. What can I do to seal the wood and prevent discoloring?

—Randy Berndt, Franklin, Mass.

Randy, you might try these two strategies to eliminate your problem. First, closely check the pine you buy to ensure that it's free of sap pockets or dark streaks where a concentration of sap may lurk. Then, before painting projects made from this wood, seal them with polyurethane varnish or lacquer to create a barrier between the paint and any leeching sap.

NOODLES FOR YOUR CUTTER

If you've just completed the turned noodle cutter shown on *page 72,* you can try it out right away with this pasta recipe from the Test Kitchen at *Better Homes & Gardens®.*

Woodworker's choice pasta

2 1/3 cups all-purpose flour
½ teaspoon salt
2 beaten eggs
⅓ cup water
1 teaspoon cooking oil or olive oil

In a large mixing bowl, stir together 2 cups of the flour with the salt. Make a well in the center of the mixture. In another bowl, combine the eggs, water, and oil. Add to the flour mixture; mix them together thoroughly.

Sprinkle the kneading surface with the remaining flour, and turn the dough out onto it. Knead until smooth and elastic (8-10 minutes). Cover and let rest for 10 minutes.

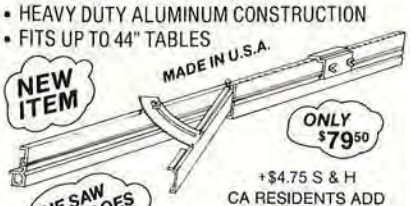
Divide the dough into fourths. On a lightly floured surface, roll each fourth into a 12 × 12" square (about 1/16" thick). Let stand 20 minutes. Cut the pasta on a hard surface. Let it stand for 10 minutes, then separate the noodles.

Cook pasta 1½ to 2 minutes. Drain well. Makes 1 lb. fresh pasta.

To store the pasta, separate the noodles and dry them overnight or until completely dry. Refrigerate in an air-tight container for up to 3 days. Or, dry the pasta at least 1 hour, seal in a freezer bag, and freeze for up to 8 months.

DOYEL FENCE SYSTEM

- INSTANTLY REPLACES THE WOOD FENCE ON RADIAL ARM SAWS.
- EASY READ CUT-OFF ACCURACY ±1/64 INCH
- EASY READ ANGLE CUT ACCURACY ±1/4°
- HEAVY DUTY ALUMINUM CONSTRUCTION
- FITS UP TO 44" TABLES



+$4.75 S & H
CA RESIDENTS ADD $6.16 (7¾% TAX)
SORRY, NO C.O.D.'S

SEND CHECK OR MONEY ORDER TO:
DOYEL ENTERPRISES
P.O. BOX 315, YORBA LINDA, CA 92686-0315
(714) 666-1770

Sleeveless
DRUM SANDER
Uses regular sandpaper — no pre-made sleeves to buy!

Twist of key tightens sandpaper to drum. Rubber backing insures long sandpaper wear.

1" x 3" long	$14.95
2" x 3" long	$17.95
2½" x 3" long	$18.95
3" x 3" long	$19.95
1" and 2½" above	$29.95
Set of 4 above	$61.95
¼" x 3" long	$15.95
2½" x 4½" long	$22.95
3" x 4½" long	$23.95
2½" x 6" long	$27.95
3" x 6" long	$29.95

Add $2.50 per order for shipping.

USE ON:
Drill press, motor, lathe, combo-tools, radial saw, drills.

AVAILABLE WITH:
★½" bore with ½",⅜", or ¼" shaft
"½-20 RH thread (except ¾" x 3")
"⅜" bore (except ¾" x 3" and 2" x 3")

MC, Visa, Check or Money order to:
SINGLEY SPECIALTY CO. INC.
P.O. BOX 5087B, GREENSBORO, N.C. 27403
CALL: (919) 852-8581

NORTHEASTERN HARDWOODS

To Order Call: **1-800-235-8317**

SPECIES	SQ. FT. — S2S 1/4"	1/2"	3/4"	BD. FT. — ROUGH 1"	1-1/2"	2"
RED OAK	1.65	1.83	1.88	1.98	2.58	2.90
CHERRY	1.65	1.83	1.88	1.98	2.50	2.75
HARD MAPLE	1.30	1.40	1.45	1.55	1.85	2.20
BIRDSEYE MAPLE	3.25	3.55	3.75	3.95	N/A	4.50
WALNUT	2.00	2.45	3.10	3.25	3.40	3.85
POPLAR	1.10	1.15	1.20	1.25	N/A	1.58

Above specials are all highest grade, kiln dried. Other species on sale include Soft Maple, Mahogany, White Oak, Ash, Basswood, Red Cedar, Beech, Elm.
Other specials include delivered package deals, cut to order pieces, turning squares, dowels, flooring, paneling, wainscoating, moulding.

SATISFACTION GUARANTEED

NORTHEASTERN HARDWOODS

Northeastern Hardwoods, P.O. Box 365-C, Salamanca, NY 14779

The Finest Quality At The Right Price!

FOR INFORMATION ABOUT PLACING AN ADVERTISEMENT IN

Better Homes and Gardens® WOOD®

PLEASE WRITE:
BILL REED
WOOD MAGAZINE
750 THIRD AVENUE
NEW YORK, NY 10017

OR CALL COLLECT: 212-551-6903

NEW "FINGER RELEASE" BLADE CLAMPS FOR SCROLL SAWS

Designed to fit most constant tension scroll saws (except far east imports).

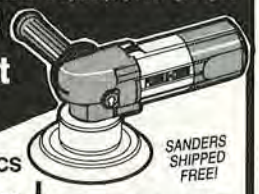
CATALOG $1.00 with details and information on-- BLADES - BOOKS PATTERNS

EXCALIBUR SCROLL SAWS

SEYCO "The Scroll Saw Specialist"
1414 Cranford Dr • Box 472749
Garland, TX 75047 - 2749
1 800 462-3353

PORTER-CABLE Random Orbit DISC RIOT!

Buy 50...get 50 FREE!



SANDERS SHIPPED FREE!

BUY 50 5" PSA DISCS get 50 FREE!
(100 Discs)...only **$15.99**
50 Discs per roll. Available in 80, 100, 120, 150, 180, 220, 320 grit. O.K. to Mix and Match Discs. Discs are shipped FREE with Random Orbit purchase, or any Disc order over $50.00!

BUY 50 6" PSA DISCS get 50 FREE!
(100 Discs)...only **$19.99**

5" Random Orbit . . . **$119.99**
5" V.S. Random Orbit. . . **129.99**
6" V.S. Random Orbit. . . **134.99**

PHONE 1-800-776-5467
☐ Check ☐ MasterCard
☐ Visa (Please include exp. date)
S&H: Under $35 - $3.75.
Over $35 - $4.75.
PA Residents add 6% Sales Tax.

Quaker State WOODWORKING SUPPLY
4434 KUTZTOWN RD. • READING, PA 19560

It takes more than luck . . . Make the right choice.

In Memory of Harvey Nolt

MADD
Mothers Against Drunk Driving

ANTIQUE reproduction furniture HARDWARE

HORTON BRASSES
Nooks Hill Rd. PO Box 120J
Cromwell, Ct 06416 203-635-4400
send $3.00 for a catalog

WOODCRAFT

FULL SIZE PATTERNS
SIMPLE TO MAKE ★ FUN ★ PROFITABLE

Check the Packets of Interest to YOU!

- ☐ 100 yard ornaments animals, birds, signs, more!
- ☐ 200 pattern packet for scroll, band & jigsaws!
- ☐ **Show stoppers** - 22 craft show top-sellers!
- ☐ 25 fun, profitable **"wind-action"** whirligigs.
- ☐ Attractive **Dutch Windmill** - 5 feet tall.
- ☐ **Country Classics** - enjoyable top-selling projects!
- ☐ **Waving Santa** - over 5 feet tall.
- ☐ **Santa & Sleigh** - 35" tall by 44" long.
- ☐ **Santa's Reindeer** - 33" tall by 28" long. 3 poses.
- ☐ Over 30 Christmas decorations & centerpieces.
- ☐ 3 foot tall Santa, snowman, soldier & candle.
- ☐ Nativity - 1/3 life size Holy Family & manger.

Send $8.00 per packet. Pick 3 for only $16.00
Fast Service • Satisfaction Guaranteed!
ACCENTS, Dept. MA100 Box 7387, Gonic, NH 03839
WOODCRAFT CATALOG - $2.00 (Free with order)

NEED EXTRA INCOME?

WOODCARVING

IS FUN AND PROFITABLE

Want to carve decoys, statues or gun stocks?

It's easy when you use the Dupli-Carver Series wood carving machines. A patented five axis carving action allows these machines to complete difficult undercuts and contours as no other machine can. Complete machines available starting as low as $359.00.

SEND $1.00 FOR OUR FULL LINE BROCHURE AND PRICE LIST AND START PLANNING YOUR FULL OR PART-TIME BUSINESS.

MARLIN INDUSTRIES, INC.
Rt. 70, Box 191, Dept. D110
Cashiers, NC 28717
(704) 743-5551

BRANDING IRON

Your Satisfaction Guaranteed

- Convenient torch heating
- Solid Brass—lasts years
- Special wording available
- Electric Models Start at $46.95
- 2nd line— 20 letters/spaces max.
- 1/4" letters
- Distinctive Border
- Add $3.00 shipping and handling
- OH res. add 6% sales tax

DISCOVER VISA MasterCard AMERICAN EXPRESS **$26.00**

Order by mail from:
BrandMark
462 Carthage Dr., Dept. W10-1
Beavercreek, OH 45383
(513) 426-6843

TO ORDER CALL TOLL FREE
1-800-323-2570
8:00-5:00 EASTERN TIME

The Ultimate Woodworking Tool.

The Woodworkers' Store
New! 1991-92 Catalog
Over 150 new, hard-to-find items!

Yes! Send me the next four issues of The Woodworkers' Store catalog for only $2/year.

Name _____

Address _____

City _____ State _____ Zip _____

The Woodworkers' Store®
Dept. 13113
21801 Industrial Blvd.
Rogers, MN 55374
Credit card orders
(612) 428-2199

A Special Invitation to Clockmaking

Offer #71155
1-800-KLOCKIT
(That's 556-2548.)

To celebrate our 20th year, Klockit is rolling back the price on our Q-80 Quartz Clock Movement. Now get up to 5 of these versatile movements for just $2.00 each, including minute and hour hands. We'll also send you a FREE 64-page color catalog.

Here's your chance to experience clockmaking. Order now!

We're Klockit. Helping you create memorable moments through time . . . for over 20 years.

Please send _____ Q-80 Movements.
Enclosed is $_____ ($2.00 for each movement—includes shipping/handling).

Name _____

Address _____

City, State, Zip _____

Expires Dec. 31, 1991. This ad must accompany your rquest and may not be reproduced.

KLOCKIT
P.O. Box 636, Dept. WD101
Lake Geneva, WI 53147

YESTERDAY'S TOOLS

TURN-OF-THE-CENTURY ROUTER PLANES

They clean grooves and dadoes and cut shallow mortises.

Print this article

Three classic but common Stanley Rule and Level Co. router planes.

Granny's tooth, grandfather's tooth, witch's tooth, or old-woman's tooth—for centuries the router plane has carried the most colorful of nicknames. The names make sense, too, considering the way the cutting iron protrudes beneath the wood-block body. It conjures up the image of a lone incisor—a common sight before dental hygiene.

According to our dictionary, one definition of "rout" is to "dig up with the snout." And that kind of describes what the manufactured iron router planes pictured *above* do. The most common of those—the Stanley No. 71½, for instance—smooths and flattens the bottoms of grooves and dadoes cut by plow planes, saws, or chisels. The wide base makes it ideal for flattening bottoms of grooves too wide for a plow plane. You can adjust the cutter to reach into corners that most planes can't reach and to rout mortises. And, you can cut stopped mortises, such as those on stair stringers.

Despite its rather peculiar looks, the No. 71½ occupied a place in the toolboxes of most late-19th- and early-20th-century carpenters. Today, craftsmen still use it for smoothing dado cuts made with a tablesaw. If you want a No. 71½ in good condition, expect to pay about $30—half the cost of a new one from Stanley.

Turn-of-the-century carpenters favored the tiny No. 271, also pictured *above*, for routing small hinges, door-strike plate mortises, and for cleaning small grooves and dadoes. First made in 1926, today it's worth $10 to $20.

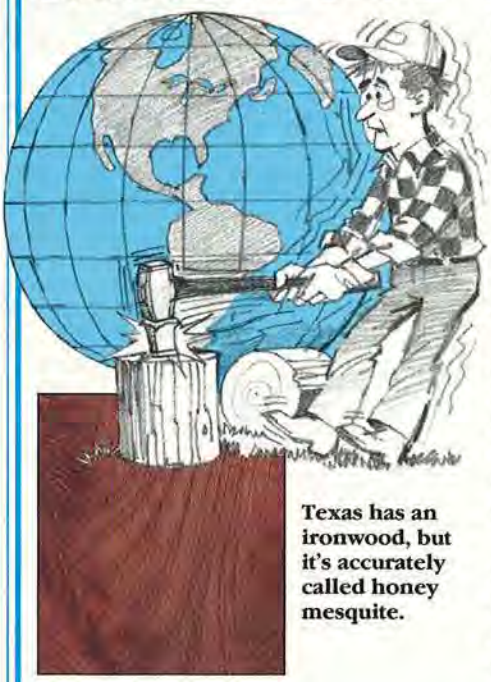
At $150 to $350, the more specialized No. 171 door-trim and router plane, pictured *above*, appeals primarily to collectors. Distinguished by its spring-loaded cutter mechanism, this fascinating tool routs door-hinge mortises with ease. Its cutter works down to a preset depth and then smooths the bottom. Manufactured from 1911 until 1935, it came with an adjustable fence and three interchangeable cutters. The blade turns in 90° increments, so you can pull it toward you with the handles perpendicular to the groove. Or, you can put the driving force at the heel of the tool, as you would other planes.

The motorized tool we now call a router also performs bottoming and mortise-cutting tasks, plus many others. Routers and router planes have similar base and handle configurations, and each has a cutter protruding from the base.

Written with Philip Whitby Photograph: Tim Murphy

Print this article

IRONWOOD AROUND THE WORLD, IT'S TOUGH AS NAILS



Texas has an ironwood, but it's accurately called honey mesquite.

In Ontario, New England, and the northern Great Lake states, there's a firewood so tough that it stalls hydraulic log splitters. Yet, it's worth the herculean effort necessary to build up a pile because it burns well through a cold winter's night. Ironwood, as it's called, has such complete combustion it leaves little ash.

Ironwood grows in Texas, too—and in Australia, Brazil, Ceylon, England, India, and other parts of the world as well. Wherever the wood appears, it attains legendary stature, taking claim to the titles of hardest and heaviest.

Despite the wood's reknown, however, ironwood isn't a specific species. Rather, it's the colloquial term for a state or region's toughest wood. All told, there are 80 distinct species around the world known as ironwood.

In Texas, for instance, it's honey mesquite. The ironwood found in the northern U.S., Canada, and Europe is actually hophornbeam. Florida has horsetail casuarina as its ironwood. In Australia, it's Queensland red ironwood; in Ceylon, gangsaw. Brazil touts pau ferro and quebracho. So, wherever you live, you'll never be wrong equating the toughest wood you know with iron, you just won't be technically correct.

By the way, whatever the exact scientific term for the different species, trees designated as ironwood frequently become homemade tool handles, mallets, fence posts, levers, and definitely warming fuel.

Illustration: Jim Stevenson

CRAFTSMAN EQUIP YOUR SHOP AT GREAT SAVINGS

Catalog of over 300 plans to build your own tools, $1.00, refundable

A wide variety of plans from complete machines & attachments to handtools for home, school & commercial shops. Featured also are accessories for wood and metal cutting lathes, drills, saws, sanders etc., plus things to make of wood and metal.

WOOD-MET SERVICES
3314 WEST SHOFF CIR. DEPT. WOOD
PEORIA, ILLINOIS 61604

DOMESTIC & FOREIGN
HARDWOODS
Quality stock for Cabinet Work
Most all sizes from 1" to 4" in thickness

HARDWOODS
ASH—BASSWOOD—BIRCH
BUTTERNUT—CHERRY
CHESTNUT—EBONY—MAPLE
OAK—POPLAR—ROSEWOOD
TEAK—WALNUT
Also hardwood plywoods

SOFTWOODS
SUGAR PINE—CYPRESS—CEDAR
SPRUCE—DOUGLAS FIR etc.

MAURICE L. CONDON CO., INC.
242 Ferris Ave., White Plains, NY 10603
914-946-4111
Monday through Friday 8 AM to 4:30 PM

WOOD PATTERNS
3-D PLAQUES-MOBILES-YARD ORNAMENTS
Each Pattern Given in 3 Sizes

* FISHES
* CAROUSEL HORSE
* EAGLE
* BUTTERFLY
* CASTLES
* ANGEL
* SEA HORSE
* DOLPHINS

$4.50 each or 3 for $12.00 ppd.
$1.00 for pattern list only
ca. res. add 6%

HOUSE OF ST★RR
P.O. BOX 783 ANGELS CAMP, CA. 95222

SPECIAL WOODCARVING GIFT #WG91
$24.95 PLUS POSTAGE

#1FS Strop has coarse leather one side. Finished leather opposite side. Shown in partially open and closed position.

ADD POSTAGE
U.S.A. $3.50
CANADA $6.50
FOREIGN $8.50

SPECIAL OFFER INCLUDES:
1— Custom made oak & leather folding strop.
1— Custom made walnut handled knife with solid brass inter-changeable chuck.
1— Heavy duty whittling blade, honed razor sharp, ready for carving.
Free 6-Page instruction booklet.

Complete catalog free with purchase, or send $1.00 for catalog only.

WARREN TOOL CO. INC.
2209-1 Rt. 9G, Rhinebeck, N.Y. 12572
TEL. (914) 876-7817

N.Y. RES. ADD SALES TAX / USA - Check or money order. Canada & Foreign money order (only). USA — COD UPS available at extra cost.

Build "Merrilegs"
Full-size Plan #121 $14.00 (catalog free with order)

CATALOG
200 full-size professional furniture plans — $3.00

SEND TODAY!
VISA
MasterCard

Full-Size Professional Plan

FURNITURE DESIGNS, INC., Dept. BZ-101
1827 Elmdale Ave., Glenview, IL 60025 — (708) 657-7526

SPECIAL OFFER
BRANDING IRON
For hard and soft wood

$26.00
Plus $3.00 for shipping and handling
Nebr. residents add correct sales tax
SATISFACTION GUARANTEED or your money back

* Shipped in one week
* Solid brass head — raised letters
* 1st Line: HAND CRAFTED BY — as above
* 2nd Line: Your choice — 20 characters/spaces max.
* Complete with wood handle
* As above but with 3rd line — $37.00 + $3.00

ORDER TOLL FREE 1-800-826-7606
For free brochure, write or call (402) 464-0511
Order by mail from: **NOVA TOOL CO.**
12500 Finigan Rd., Dept. BH
P.O. Box 29341, Lincoln, NE 68529
VISA MasterCard

Print this article

Worth writing for...

You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below. Each company mails the catalogs or information directly to you.

POWER TOOLS

SCROLL SAW, CRAFT & WOODWORKING CATALOG—Specialty products from the exclusive distributors of HEGNER, the precision saws with SCROLLVERGNUEGEN. Complete information on scroll accessories, including blades and lettering guides. Also JET Clamps, HEGNER Lathes, PLANO Vertical Glue Press, and more. Toll-free customer service hotline included! AMI, LTD. $2.00. *Circle No. 3.*

PROFESSIONALS ONLY—Information on the new line of FELDER BF6 woodworking machines, including table saw, shaper, jointer/planer and combination machines, starting as low as $4,899. Also ULMIA Table Saws. Deal directly with the importer. Get complete information on the best professional machine value! AMI LTD. $1.00. *Circle No. 4.*

1991-92 TOOL CRIB CATALOG—offers a wide selection of merchandise for home woodworkers to industrial builders and features top manufacturers such as Black & Decker, Delta, Makita, Porter Cable, Bosch, Milwaukee, Ryobi, Freud and many more. We offer competitive prices with quality service and same day shipping. 208 page 1991-92 catalog. It's worth it! TOOL CRIB. $3.00. *Circle No. 6.*

PORTABLE SAW MILL—a one man saw mill weighing 45 lbs. Gas and electric models will cut dimensional lumber from logs up to 20 in. diameter. Send for brochure. BETTER BUILT CORP. Free. *Circle No. 10.*

175-PLUS USES GUIDE—for Dremel Moto-Tool. Written from the do-it-yourselfer's view, this book shows how to plan and do a variety of everyday projects using the versatile Moto-Tool and cordless Freewheeler. 96-page book with over 275 photos includes tips on using Moto-Tool with flex-shaft, drill press, router attachment, chainsaw sharpening attachment, shaper/router table. DREMEL. $4.00. *Circle No. 33.*

INCA MACHINERY INFORMATION—Complete information on the famous line of Inca woodworking machines. Designed for precision work by the small to medium sized cabinet shop. Used by thousands of hobbyists and professionals. Table saws, bandsaws, joiner/planers, dust collector, radial arm saw. GARRETT WADE CO. Free. *Circle No. 44.*

LOBO POWER TOOLS—Fine crafted woodworking power tool, top quality, affordable prices. A commitment of customer satisfaction, with a full 1 year warranty. We sell a complete line with many options for our band saws, table saws, planers, jointers, double drum sanders, edge sanders, wide belt sanders, power feeders and many, many more. Send today for a free brochure. LOBO POWER TOOLS. Free. *Circle No. 57.*

WOODWORKING MACHINE CATALOG—New 24-page color catalog introduces many new do-it-yourself woodworking machines. Includes planers, dust collectors, drill presses, sanders, lathes, and specializes in scroll saws and accessories. PENN STATE INDUSTRIES. Free. *Circle No. 75.*

VARIABLE SPEED SCROLL SAW—Information package available from Penn State Industries describing the specifications and applications of its super VS-15" variable speed scroll saw. Special discount pricing available on current promotion. PENN STATE INDUSTRIES. Free. *Circle No. 76.*

SURFACE PLANER—Information package available from Penn State Industries describing the specifications and applications of its super 12½ inch surface planer. Special discount pricing available on current promotion. PENN STATE INDUSTRIES. Free. *Circle No. 77.*

PERFORMAX DRUM SANDERS—Exclusive features at an affordable price for precise wide surface sanding. The complete line includes the retrofitting Performax Component Sander, the Pro Max II, Super Max 25, Super Max 25X2, and Super Brush 24 Sanders. New accessories for production-mode sanding of pieces as small as 2¼" long. Send for brochure. PERFORMAX PRODUCTS. $1.00. *Circle No. 78.*

THE PRECISION SCROLL SAW FOR THE ENTIRE FAMILY!—The Hawk was designed for beginners and built for expert woodworkers. Learn how to produce creative leisure time projects for fun or to make money...we'll show you how! Make cuts so intricate and smooth they don't require sanding. Over six models to choose from. Send today for all the facts. RB INDUSTRIES, INC. Free. *Circle No. 84.*

THE VERSATILE RBI WOODPLANER/MOLDER/SANDER!—It's indispensable! It's 4-in-1. It's RBI's Woodplaner/Molder/Sander/Gang Rip Saw. Find out how the Woodplaner saves you money turning rough stock into beautiful professional quality projects. With 3 models to choose from there's one that fits your needs. It does it all, so you can do it all! Send today. RB INDUSTRIES, INC. Free. *Circle No. 85.*

SCROLL SAWS, ACCESSORIES, PATTERNS, BOOKS—A complete brochure on all kinds of scroll saw accessories. Featuring Excalibur scroll saws and lettering layout guides from Seyco, "The Scroll Saw Specialists." Free pamphlet, "Selecting Your Scroll Saw" included. Send for brochure. SEYCO SALES CO. $1.00. *Circle No. 89.*

MOLDER-PLANERS FROM WILLIAMS & HUSSEY—Mold, plane, and edge, convert from moulder to planer in less than 2 minutes. The W-7 series is available in 3 models for manual, power in feed, or power in feed/out feed. The units plane to a satin, almost sanded finish, produce doll house to crown sized mouldings, raised panels, and curved molding. Custom knives available up to 7" wide and ¾" depth of profile. Rugged, well-made, dependable, and transportable. Complete with sturdy movable stand. Send for catalog. WILLIAMS & HUSSEY. $1.00. *Circle No. 93.*

HAND TOOLS

PERSONAL BRANDING IRONS—Brochure describes branding irons that enable you to put your name on your work quickly and easily. Made especially for branding wood, they are available with 1, 2, 3 or 4 lines of copy. Changeable date also available. NOVA TOOL CO. $1.00. *Circle No. 160.*

THE JAPAN WOODWORKER'S 72-PAGE CATALOG—is loaded with the a huge selection of Japanese saws, waterstones, chisels, planes, carving knives, cutlery and garden tools. See our Tools As Art section for the most expensive hand tools available. Send for 1991 catalog and all supplements for two years. WOODLINE TOOL & SUPPLY. $1.50. *Circle No. 190.*

PLANS

OVER 1000 WOODCRAFT PATTERNS!—Enjoy making gifts, toys, lawn ornaments, holiday designs, whirligigs, folk art, bird houses and feeders, household and yard accessories plus much more! Simple enough for the beginner, fun and profitable for the pro. Send for catalog plus sample pattern. ACCENTS IN PINE. $2.00. *Circle No. 310.*

WOODWORKERS' PLANS AND SUPPLIES—Wood projects are simplified with the high quality plans, specialty hardware and other supplies offered by Armor Products. Over 100 plans are available for making toys, desks, clocks, pool tables, lamps, chests, and other furniture. Movements, dials, moldings, ornaments, dollhouse kits, door harp supplies and tuning pins are also available. ARMOR PRODUCTS. $1.00. *Circle No. 315.*

SALES TESTED DESIGNS—available as plans only, parts kits, or plans and parts kits. Complete stock of parts, tools and supplies. Door harps to digital electronic/wood projects. Full size plans! Bulk prices on turnings, dowels and music movements. Catalog price refundable on first order. CRAFTER'S MART. $2.00. *Circle No. 328.*

FULL-SIZE FURNITURE PLANS CATALOG—Illustrates and describes over 200 plans for making furniture of quality found in museums and fine furniture stores. Plans include rolltop desk, cradles, dining tables, chairs, buffets, chests, gun cabinets, poker table, children's furniture, rocking horse, spinning wheels, and more. Bill of materials exploded drawings assist the woodworker. FURNITURE DESIGNS, INC. $3.00. *Circle No. 345.*

UNIQUE WOOD PATTERNS—Let your imagination run wild. Each pattern given in 3 sizes. No enlarging or reducing is necessary. Simply trace, cut and create. A list of suggestions and helpful hints included with each pattern. List of patterns only $1.00. HOUSE OF STARR. $1.00. *Circle No. 375.*

PROJECT PLANS—Over 400 easy-to-build woodworking project plans. Nation's leading source for door harp plans and parts, holstein cow projects, toy plans, country furniture, etc. Over 3000 hard-to-find specialty items. Send for your big new 72-page catalog. MEISEL HARDWARE SPECIALTIES. $1.00. *Circle No. 401.*

THE COMPLIMENTS NEVER END!—when you show off your completed projects made from our full size patterns. Over 1000 unique, easy to make designs include popular folkart, wind action whirligigs, old world Santas, country furniture, shelves and shadow boxes, action toys, 3D layered animals, country critters, yard ornaments, Christmas yard decorations and more! No enlarging required—just trace our patterns onto wood and cut out. Fast service, satisfaction guaranteed. Send for our latest catalog. THE WINFIELD COLLECTION. $1.00. *Circle No. 480.*

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 94

WOOD-MET SERVICES CATALOG LISTS SOME 700 PLANS—to build a wide variety of tools and accessories to equip your workshop. They vary from complete machines to hand tools, photo accessories to shop methods. Included are some 80 attachments for your lathes, drill presses & routers, over 60 hand tools, plus sander, welder, shaper, table saw accessories, etc. Others include a portable band sander, metal spinning tools, air compressor, ¾" spindle wood shaper, wood lathe & chisels & a 12-in. thickness planer. Send for catalog, order plans, build the equipment for your shop and save. WOOD-MET. $1.00. *Circle No. 496.*

LUMBER

WOODWORKERS! HELP CELEBRATE OUR 62ND YEAR OF SERVICE—Send for our new 132-page Craftsman 1991-92 Catalog #58. 42 varieties of choice hardwoods ⅛ in. to 4-in. thickness. Fine hardwood veneers, tools, moldings, trim, marquetry inlays, upholstery and lamp supplies, finishes, clock kits, and hard-to-find hardware. 4,000-plus items for your projects. CRAFTSMAN WOOD SERVICE CO. $1.00. *Circle No. 520.*

NORTHEASTERN HARDWOODS—We offer over 20 species of the highest quality kiln dried domestic hardwoods. Sold on board footage or cut to order basis. Compare our quality and prices. Unconditional satisfaction guaranteed. Great monthly specials. Super package deal at delivered prices. Attractive quantity discounts. Quick delivery. Send for new catalog. NORTHEASTERN HARDWOODS. $1.00. *Circle No. 563.*

STEVE H. WALL LUMBER CO—Quality hardwoods and woodworking machinery for the craftsman and educational institutions. 22-page catalog lists 15 species of popular hardwoods at wholesale prices. Also dealers for MiniMax, Freud and ProCut woodworking machines. STEVE H. WALL LUMBER CO. $1.00. *Circle No. 592.*

EXOTIC IMPORTED AND DOMESTIC HARDWOODS—Over 75 species of lumber, bowl planks, turning squares and veneer. Samples (½ x 3" x 6") ideal for craftsmen, furniture and cabinet makers, architects, and designers available. Catalog provides common and botanical name, source, and description of each wood. Send for catalog. WOODWORKERS SUPPLY OF ARIZONA $1.00. *Circle No. 598.*

VIDEOS

LOBO POWER TOOLS—Complete one stop location for all affordable woodworking power tools. Excellent quality at the most affordable prices. Customer satisfaction is job #1. We inventory and sell a full line of band saws, table saw, planers, jointers, sanders (all sizes) and much, much more. All equipment has a 1 year warranty. Send for video; price refundable with $500 purchase. LOBO POWER TOOLS. $10.00. *Circle No. 645.*

GENERAL WOODWORKING CATALOGS

CONSTANTINE'S WOODWORKERS' CATALOG—116 pages—over 4,000 woods, veneers, inlays, carvings, moldings, legs, pegs—everything for people who like to build with, turn, carve, refinish wood! Includes 33 pages of hand and power tools, 24 pages of hard-to-find hardware, 12 pages of finishing supplies... books, kits, plans and more... all backed by Constantine's 180 years of woodworking experience and 60-day no-questions-asked guarantee. 2 year subscription. ALBERT CONSTANTINE AND SON, INC. $1.00. *Circle No. 820.*

MASTER TOOLS CATALOG—1991-92 220-page master woodworking tools catalog. Full line of the best hand tools, power tools & accessories, machinery, glues, finishing supplies, workbenches, and much more. Hundreds of books included. 220 pages. All four-color. Lots of technical information. GARRETT WADE CO. $4.00. *Circle No. 855.*

THE BEST THING THAT EVER HAPPENED TO THE AMERICAN WORKSHOP—You will simply be amazed at the number of new items we have brought on line this year. Our incredible catalog features a huge selection of wood and metal working machinery and accessories. Loaded with tons of goodies you can't resist. GRIZZLY IMPORTS INC. Free. *Circle No. 860.*

TOOLS ON SALE—A division of Seven Corners Ace Hardware Inc. offers a comprehensive catalog featuring over 820 pages of the most competitive prices in the industry. If you're looking for savings and fast delivery on over 6500 items, request our catalog. This catalog offers one of the most complete selections of power tools available anywhere from the most respected manufacturers in the industry: Milwaukee, Makita, Porter-Cable, Black & Decker, Freud, Bosch, Delta, and many more. SEVEN CORNERS ACE HARDWARE. $1.00. *Circle No. 920.*

DISCOUNT WOODWORKING TOOLS AND SUPPLIES—Get your FREE copy of Trendline's new 68 page full-color catalog. You'll find the best prices for over 3,000 brand name products including: power tools and accessories, hand tools, screws, hardware, wood components, plans, books, and much more. TRENDLINES. Free. *Circle No. 950*

COMPLEMENTARY TOOL CATALOG—Woodcraft offers over 4,000 of the finest quality woodworking tools, books, supplies, and cabinetry hardware in our complete full color catalog. Craftsmen, cabinetmakers, carvers, woodturners, and hobbyists have depended on Woodcraft since 1928. Backed by Woodcraft's unconditional guarantee. Free technical assistance. WOODCRAFT SUPPLY CORP. Free. *Circle No. 955.*

THE WOODWORKERS' STORE CATALOG—New! The Woodworkers' Store 1991-92 catalog with over 150 new items features 100 color pages of domestic and exotic hardwoods, veneers, wood parts, specialty hardware, kitchen accessories, finishing supplies, tools, books, and plans. Many exclusive items and hard to find specialties. Orders shipped in 24 to 48 hours. $1.00 credited toward first purchase. Satisfaction guaranteed. WOODWORKERS' STORE. $1.00. *Circle No. 965.*

KITS

OUR QUEEN ANNE FURNITURE KITS—are ready to assemble and finish. They include dining room table, chairs, hutch, sideboard, a variety of occasional tables, and a personal desk. All are made in solid cherry, oak, walnut, and mahogany. We also stock individual Queen Anne legs for every project. Complete information in our brochure packet. ADAMS WOOD PRODUCTS. Free. *Circle No. 1002.*

DO-IT-YOURSELF KITS—Choose from a large selection of grandfather, wall and mantel clocks, as well as elegantly styled accent furniture pieces. Kits are made of solid ¾" hardwoods, primarily cherry, oak, and black walnut. Buy direct from the factory and save. Send for 36 page color catalog. EMPEROR CLOCK CO. $1.00. *Circle No. 1030.*

QUALITY CLOCK KITS AND PLANS—Handmade and semi-assembled of carefully selected ¾ in. cherry, oak, or walnut with beveled glass. Or build from "scratch" using our detailed plans and trim pieces. Choice of quality movements. Established in 1916. KUEMPEL CHIME CLOCK WORKS. $3.00. *Circle No. 1050.*

SHOP ACCESSORIES

PATENTED SELF STABILIZING SAW HORSE—THE PACKHORSE—opens to a stable working surface on virtually any uneven floor or out-doors ground. Carried as easily as a tool box when clipped together, the pair of saw-horses conveniently stores in truck, trunk or closet. Dipped in boiled linseed oil for weather resistance. Clamp sites at each end for securing work. Practical and durable, for the professional or serious hobbyist, Packhorse tests to hold over two tons of weight. Send for brochure. DAVALCO PRODUCTS. Free. *Circle No. 1223.*

NEW...RADIAL ARM FENCE SYSTEM—Doyel Enterprises produces a precision cut-off and angle cutting fence system. Only one 90 degree cut is required on your table top (no more swiss cheese). Instantly replaces your existing wood fence. Angle accuracy less than ¼ degree and cut-off accuracy of less than ⅛ inch. Quality heavy duty extruded and machined construction. Send $2.50 (credited to first order) for complete brochure and instruction manual. DOYEL ENTERPRISES. $2.50. *Circle No. 1225.*

EASY DOES IT—with HTC'S power tool accessories. Discover many unique items, designed only with you, the dedicated woodworker, in mind. Make your machinery safer, increase the working area of your shop and accomplish nearly impossible tasks easily, quickly, accurately. Full-line catalog and price list. HTC PRODUCTS, INC. Free. *Circle No. 1245.*

BUY YOUR SANDING BELTS DIRECT FROM THE MANUFACTURER—Industrial Abrasives is the company that gives you 12 free belts with every dozen ordered. But, sanding belts are not the only product we have to offer. In our catalog you will find many specialty items not readily available in your hardware store. Price of catalog refunded with first order. INDUSTRIAL ABRASIVES CO. $1.00. *Circle No. 1248.*

WOOD MOISTURE METER—Avoid moisture problems such as cracking, warping, splitting, delamination etc. by using a moisture meter, as described in the latest brochure. Moisture Meter Mini-Ligno is designed for serious hobbyists and woodworkers. Attachments for depth measurements and remote reading during air and kiln drying are available. Available Moisture Range 6-20%, 6-36% or 4-30%, 4-60%. Catalog describes complete line of moisture meters. LIGNOMAT USA, LTD. Free. *Circle No. 1250.*

ROUTER SPEED CONTROL—Reduces speed electronically without reducing torque. Route at the speed that gives best results with the wood and bit you are using. Speed adjustable from full speed to 0 RPM. Less tear out—stops burning—less wear on bits—easy to use. Send today for information. MLCS LTD. Free. *Circle No. 1251.*

BITS, BLADES, CUTTING TOOLS

AmMax TOOL CO.—offers "Professional Quality" tungsten carbide tipped router bits, shaper cutters, saw blades, and 16" scroll saw machine, at lower "wholesale prices." 16" scroll saw featuring light load, cutting without blade breakage. UL and CSA approved. Nicholson carbide tipped saw blades from $6.90; woodworking files from $6.95. AmMAX TOOL CO. 50¢. *Circle No. 1304.*

TIRED OF THE IMPORTS?—All new 1991 router bit catalog featuring over 1100 items. This factory direct mail order 56-page catalog offers the industry's largest selection of the finest quality American made router bits, shaper cutters, and accessories. EAGLE AMERICA CORP. Free. *Circle No. 1320.*

WOODWORKING TOOLS—Freud provides the finest in hand tools, carbide cutting tools, and hand held power tools. From drills and sanders to carbide saw blades and router bits. Send for catalog. FREUD. $2.00. *Circle No. 1321.*

PRODUCTION QUALITY CARBIDE TIPPED ROUTER BITS—MLCS Ltd. has a new 32-page catalog featuring hundreds of high quality carbide tipped router bits, shaper cutters, the Router Speed Control, the "Merle Adjustable Corner Clamp," plus other Professional Woodworking Products. Prices 50% to 70% lower than elsewhere. Value, quality and prompt service guaranteed! MLCS LTD. Free. *Circle No. 1350.*

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 94

SAW BLADE VALUES—Olson Saw's unique "furniture band" is specifically designed to provide fast, smooth cuts in all types of wood. Included in Olson's free literature package are a huge list of resin on resin abrasives and carbide tipped circular saw blades in addition to a growing selection of band scroll (incl. pinned), jewelers and spiral saw blades. OLSON CATALOG SALES. Free. *Circle No. 1365.*

HARDWARE/WOOD PARTS

HARDWARE CATALOG—A unique 48-page catalog of the very finest in classic, traditional solid brass cabinet hardware. All of British or No. American manufacture. Double & single post handles, knobs, escutcheons, standard & specialty hinges, box hardware, brass screws, castors, latches, catches, locks, and more. GARRETT WADE CO. $3.00. *Circle No. 1427.*

SQUARE DRIVE SCREWS—Thousands agree—once you try them you will never want to use anything else! The square drive recess virtually eliminates work-damaging driver bit "cam-out," the deep threads result in exceptional holding power, and they are heat treated for strength. Sizes from #4 x ⅜" to #12 x 4", with stainless steel, solid brass, brass plated, and zinc plated available. Quantity discounts. Send for literature. McFEELY HARDWOODS. $1.00. *Circle No. 1450.*

WOOD TOY PATTERNS—Patterns for all ages including children's patterns and executive toys. New catalog has many new patterns to choose from including parts and wheels. Send for new catalog and receive a coupon for free wheels and axle pegs. TOYS AND JOYS. $1.00. *Circle No. 1480.*

QUALITY AMERICAN-MADE WOOD TURNINGS—such as shaker pegs, spindles, toy wheels, toy parts, craft items, and dowel rods in birch, oak, walnut, and cherry. Send for complete 32-page catalog. WOODWORKS. $1.00. *Circle No. 1490.*

INCOME OPPORTUNITIES

MAKE MONEY IN FURNITURE RESTORATION THE MINUTEMAN WAY—Earn $200-$1000 per day stripping, repairing, refinishing, mirror resilvering, and/or veneering, at home or in shop, spare time or full time. We provide complete training; no experience necessary. Free workshop teaches you latest in furniture restoration. You have to see it to believe it! Business preview video $19.95. Send for catalog. MINUTEMAN. $2.00. *Circle No. 1661.*

MISCELLANEOUS

THE CUSHION CONTOUR SANDER—is a new concept in pneumatic drum sanding. Sanding sleeves are slid over an air bag (inflated with a hand tire pump) on an arbor to mount it between centers on a wood lathe. Drum effectively takes on profiles, curves, and bevels practically eliminating flat spots and chatter marks. INDUSTRIAL ABRASIVES CO. $1.00 (refunded with first order). *Circle No. 1976.*

SARAL® WAX-FREE TRANSFER PAPER—Available in 5 colors, allows the user to transfer their design from a sketch, pattern, template or free hand to any surface. It makes crisp clean tracings which can be erased or painted over with no smearing. It's great for all woodworking projects. Brochure and sample. SARAL PAPER CO. INC. Free. *Circle No. 2000.*

IF YOU ARE INTERESTED IN RESTORING ANTIQUES—this 240-page catalog packed with unusual, hard-to-find items is just for you. Included are hundreds of essential items for antique restoration including top quality brass reproduction hardware, oil lamps and accessories, numerous wood component repair parts and kits, caning and basketry supplies, everything needed for wood refinishing, related tools, books, and a complete line of upholstery equipment and supplies. All at wholesale prices. Send for this informative catalog. VAN DYKE'S RESTORERS. $1.00. *Circle No. 2077.*

LEGAL IVORY—Virtually identical to animal ivory. Tagua is the nut from a tropical palm tree. Ideal for jewelry, knobs, small turnings, inlay, or scrimshaw. Box of 10 REGULAR size (up to 1½" diameter) or Box of 5 JUMBO. Send for information. WOODWORKERS SUPPLY OF ARIZONA. Free. *Circle No. 2090.*

CARVING SUPPLIES

WOOD CARVING MACHINES AND ACCESSORIES—make all types of wood carving easy, fun and profitable. The machines do the work. Whether for sign carving, flat 3-D, decoys, panels, gun stocks or furniture, we have the proper machine for the job. Professional woodcarving for the hobbyist and superior quality for the professional. Begin your hobby or full or part-time business by ordering our catalog and price list. MARLIN INDUSTRIES. $1.00. *Circle No. 2150.*

WOODCARVING TOOLS—Whittlers and carvers—Warren Tool Co. offers a complete catalog of whittling and carving, hand/power tools, sharpening stones, wood cut-outs and related wood carving supplies. WARREN TOOL CO., INC. $1.00. *Circle No. 2185.*

WOOD CARVERS SUPPLY INC.—OUR 35TH YEAR—Complete 76-page color catalog including over 2,000 carving tools, books & supplies, such as carousel animal kits, gun checkering tools, ship model kits, plus much more. We offer great service, quality products and a 30-day money back guarantee. Send for 2-year subscription. WOOD CARVERS SUPPLY INC. $2.00. *Circle No. 2190.*

CLAMPS

MERLE ADJUSTABLE CORNER CLAMP—Quick & easy to use. Fully adjustable from 2⅝" to 69x69 in. Perfect for clamping picture frames, cabinets, or anything that requires 90° corner clamping. The Merle Clamp is cast aluminum & steel construction, a true industrial quality tool. Send today for information. MLCS LTD. Free. *Circle No. 2250.*

QUAKER STATE WOODWORKING SUPPLY INC.—one of the largest "Quick-Grip" and "Jorgensen" dealers on the EAST COAST. Great prices along with expert service and advice will make QUAKER STATE your supplier of woodworking clamps and acc. Information and price list. QUAKER STATE. Free. *Circle No. 2260.*

CLAMPING MADE EASY—THE NEW TOULAN 2005 CORNER CAMCLAMP FROM ENGLAND—Introduced at IWF-90, this little award winning clamp was an overwhelming success. Awarded the Britain Engineering award of Excellence and selected to the design Centre of London, the clamp makes clamping easy, fast, efficient. TECH REP & ASSOCIATES. Free. *Circle No. 2270.*

CLOCKS

KLOCKIT'S FREE 64-PAGE COLOR CATALOG—is packed with the largest selection of beautiful wood clock kits for all skill levels, a huge selection of quartz and mechanical clock movements, dials and accessories, turned wood parts, music movements, tools and much more for the craftsman! KLOCKIT. Free. *Circle No. 2335.*

Worth writing for...

Better Homes and Gardens®
WOOD Magazine, October 1991
Dept. OCWO91
P.O. Box 2713
Boulder, Colorado 80329–2713

TO ENSURE PROMPT HANDLING OF YOUR ORDER FOLLOW THESE INSTRUCTIONS:

- **Circle your choice**
- **Enclose check or money order for cost of booklets plus $2.00 service charge (no stamps accepted)**
- **NO FOREIGN ORDERS ACCEPTED**
- **Send coupon and remittance to address above**
- **ALLOW 4-6 WEEKS FOR DELIVERY**
- **Coupon expires November 10, 1992**

WOOD SUBSCRIPTION

1. A 1 year WOOD subscription (9 issues) for $24.97 (U.S. price)—a $10.58 savings off newsstand rate. Allow 6-8 weeks for first issue. Canadian price $34.00. Be sure to include payment with total below. NO FOREIGN ORDERS ACCEPTED ON THIS COUPON; please contact Subscription Dept. directly.

Circle numbers below corresponding to items in this issue. Please include $2.00 for handling charge.

3....$2.00	78....$1.00	345....$3.00	820....$1.00	1223.....Free	1365.....Free	2150....$1.00
4....$1.00	84.....Free	375....$1.00	855....$4.00	1225....$2.50	1427....$3.00	2185....$1.00
6....$3.00	85.....Free	401....$1.00	860.....Free	1245.....Free	1450....$1.00	2190....$2.00
10.....Free	89....$1.00	480....$1.00	920....$1.00	1248....$1.00	1480....$1.00	2250.....Free
33....$4.00	93....$1.00	496....$1.00	950.....Free	1250.....Free	1490....$1.00	2260.....Free
44.....Free	160....$1.00	520....$1.00	955.....Free	1251.....Free	1661....$2.00	2270.....Free
57.....Free	190....$1.50	563....$1.00	965....$1.00	1304.....50¢	1976....$1.00	2335.....Free
75.....Free	310....$2.00	592....$1.00	1002.....Free	1320.....Free	2000.....Free	
76.....Free	315....$1.00	598....$1.00	1030....$1.00	1321....$2.00	2077....$1.00	
77.....Free	328....$2.00	645..$10.00	1050....$3.00	1350.....Free	2090.....Free	

Name (please print)_____
Address_____
City_____
State_____ Zip Code_____

I AM ENCLOSING:

$_____ for priced items
$ 2.00 for handling
$_____ total remittance

ORDER 1-800-328-0457 - MAIL ORDER HOURS 7:00-5:30 C.S.T. MONDAY-FRIDAY

1991 TOOL CATALOG AVAILABLE
Call Toll-Free 1-800-328-0457 In Minnesota Call (612)224-4859
FAX: (612)224-8263
CHECK • MONEY ORDER • VISA • MASTERCARD • DISCOVER
SEVEN CORNERS ACE HDW. Inc.
216 West 7th St. • St. Paul, MN 55102 • Est. 1933

TOOLS ON SALE™
AMERICA'S LOWEST PRICED TOOLS
FREE FREIGHT TO THE
48 CONTINENTAL STATES ON EVERY ITEM
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DELTA BENCH TOP TOOLS

Model		List	Sale
23-700	Wet/Dry Grinder	234	159
23-680	6" Bench Grinder 1/4 HP	86	75
23-880	8" Bench Grinder 1/2 HP	151	115
11-950	8" Drill Press	199	145
28-160	10" Hobby Band Saw	210	144
31-050	1" Belt sander 2.0 amp	104	78
31-460	4" Belt/Disc Sander	198	139
31-340	NEW 1" Belt/8" Disc Sander	268	184
31-080	NEW 1" Belt/5" Disc Sander	134	94

NEW TOOLS BY DELTA

40-560	16" 2 speed Scroll Saw	266	184
23-580	5" Bench Grinder 1/5 HP	62	54
11-990	12" Bench Drill Press	276	185
11-090	32" Radial Bench Drill Press	399	279
43-355	3/4" Shaper 1 1/2 HP	964	685
43-505	1/2" Bench Router/Shaper	399	279
22-540	12" Bench Top Planer	595	389
36-220	10" Compound Mitre Saw	350	235
28-180	Bench Band Saw	232	169

DELTA STATIONARY

34-761	10" Unisaw 1-1/2 HP	1715	1295
33-990	10" Radial Arm Saw	818	585
37-280	6" Motorized Jointer	488	379
50-179	3/4 HP 2 stage Dust Collector	483	335
50-181	2 HP Dust Collector	885	605
22-662	13" Planer with 2 HP motor, stand, and 32-011 EMS	1635	1175
33-050	NEW 8-1/4" Sawbuck	781	549
33-055	above Saw complete w/legs	865	589
34-330	NEW 8-1/4" Table Saw 13A	343	229
34-985	1/6 HP Stock Feeder	698	485
34-670	10" Motorized Table Saw	511	365
32-100	NEW Station Plate Jointer	645	285
36-040	NEW 8-1/4" Cmpd Mitre Saw	224	165
34-915	30" Unifence	385	239
34-897	50" Delta Unifence	525	289
36-755	NEW 10" Tilt Arbor Saw	1264	855

MILWAUKEE TOOLS

6527	NEW Sawzall 8A var. speed with case	299	164
0399-1	12V cdlss Drill Kit complete	299	159
0402-1	above Drill w/keyless chuck	304	169
0395-1	9.6V cordless Drill w/case	279	154
0224-1	3/8" Drill 4.5 amp magnum	199	113
0234-1	1/2" Drill 4.5A mag 0-850 rpm	219	118
0244-1	1/2" Drill 4.5A mag 0-600 rpm	219	118
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	185	105
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	179	102
0375-1	3/8" close quarter Drill	219	129
0379-1	1/2" close quarter Drill	249	147
6539-1	cdls Screwdriver 190 rpm	125	73
6540-1	6539-1 Driver w/bits & case	159	108
6546-1	cdls Scrwdvr 200 & 400 rpm	135	79
3102-1	Plumbers right angle Drill Kit	350	195
5399	1/2" D-hdle Hammer Drill Kit	319	184
1676-1	HD Hole Hawg with case	449	244
6511	2 speed SawZall with case	234	134
6750-1	Drywall gun 0-4000 5 amp	159	93
6507	TSC SawZall with case	249	135
6170	14" Chop Saw 15 amp	479	275
6014	Orbital Sander 1/2 sheet	209	116
8977	Variable temp. heat gun	114	75
5397-1	3.8" var. spd Hammer Drill Kit	239	139
5371-1	1/2" var. spd Hammer Drill Kit	335	185
3107-1	1/2" var. spd rt angle Drill Kit	360	199
6754-1	Drywall Gun 0-4000 5.4 amp	189	114
3300-1	1/2" var. speed rt angle Drill	319	179
5660	1-1/2 HP Router - 10 amp	325	185
5680	Router 2 HP - 12 amp	355	205
6215	16" Chain Saw	299	174
0235-1	1/2" Drill w/kyls chuck mag	219	125
6145	4-1/2" Grinder 10,000 rpm	159	95
6142	6145 with case & acces	197	125
6749-1	Drywall Gun 0-2500 5.4 amp	209	122
5353	Eagle 1-1/2" Rot. Hammer w/case	895	499
6365	7-1/4" Circular Saw 13 amp	209	118
6367	above Saw - double insulated	205	120
6366	6365 w/fence & carbide blade	219	125
6368	6365 w/fnce,carb. blde,& cse	239	134
6377	7-1/4" Worm Drive Saw	319	169

TOOLS ON SALE™ X-TRA SPECIAL
Buy any 7-1/4" saw(6365,6366,6367,6368,6377) & receive an Extra Milw. Carbide Tip Saw Blade an $11.00 value - FREE

PONY AIR PALM NAILER

LPN672	Air Nailer with glove	Sale	94.99

FREUD CARBIDE TIPPED SAW BLADES
5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B.	40	67	37
LU82M010	Cut-off 10"	60	90	45
LU84M011	Comb 10"	50	76	39
LU85M010	Super Cut-off10"	80	112	56
LM72M010	Ripping 10"	24	66	36
LU73M010	Cut off 10"	60	82	45
LU87M010	Thin Kerf 10"	24	70	38
LU88M010	Thin Kerf 10	60	86	44
LU98M010	Ultimate 10"	80	125	69
TK206	10" Framing	24	38	19.95
TK303	7-1/4" Framing	40	37	21.25
TK306	10" Finishing	40	46	24.95
TK906	10" Combo	50	52	27.00
SD306	6" Dado - Carbide		215	109
SD308	8" Dado - Carbide		229	117
F0	1-3/4" x 5/8" Bisc. 1000 Qty		32	27
F10	2-1/8" x 3/4" Bisc. 1000 Qty		32	27
F20	2-3/4" x 1" Bisc.1000 Qty		34	29
FA	Assorted Biscuits 1000 Qty		34	29
FB100	16 piece Forstner Bit Set		331	165
94-100	5 pc. Router Bit Door System		319	158
JS100	Biscuit Jointer with case		333	159
FT2000	3-1/4 HP Plunge Router		350	179

MAKITA TOOLS

Model		List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	130	78
6071DWK	above Drill w/removable batt.	199	115
5090DW	3-3/8" Saw Kit 9.6 volt	255	137
6010DWK	3/8" cordless Drill Kit 7.2V	170	97
6010SDW	3/8" cdls Drill Kit 7.2 volt	99	59
DA3000DW	3/8" Angle Drill 7.2 volt	251	134
4390DW	9.6 cordless Recip Saw Kit	230	127
6012HDW	2 speed Drill w/clutch-comp	236	125
6092DW	var. spd Drill, Kit complete	252	127
6093DW	v/spd Drill w/clutch-complete	261	129
6095DW	above Drill w/keyless chuck	268	135
6093DL	6093DW Drill Kit w/Flash Lt.	299	169
632007-4	9.6 volt Battery	48	30
632002-4	7.2 volt Battery	40	28
5007NBA	7-1/4" Saw w/electric brake	238	124
5008NBA	8-1/4" Saw w/electric brake	295	158
B04510	1/4 sheet Pad Sander	99	54
9900B	3" x 21" Belt Sander w/bag	278	144
9924DB	3"x 24" Belt Sander w/bag	293	153
9045N	1/2 sheet Fin. Sander w/bag	241	128
4301BV	Orb. var. spd Jig Saw 3.5A	289	149
JR3000V	var. speed Recip Saw w/case	235	129
LS1020	10" Mitre Saw 3.5 amp	560	289
9820-2	Blade Sharpener	387	189
1900BW	3-3/4" Planer with case	217	112
1911B	4-3/8" Planer 7.5 amp	255	139
1100	3-1/4" Planer with case	426	219
9207SPC	7" Sander/Polisher	288	154
3601B	1-3/8 HP Router	256	139
9501BZ	4" Grinder 3.5 amp	130	69
B04530	6" Round Sander	106	64
B04550	1/4 sheet Pad Sander w/bag	89	57
DA3000R	3/8" Angle Drill	280	148
HP2010N	3/4" var. spd Hmr Drill w/cse	300	165
2708W	8-1/4" Table Saw	509	265
2711	10" Table Saw with brake	851	475
2030N	12" Planer/Jointer	3450	1699
1805B	6-1/8" Planer Kit with case	717	365
5005BA	5-1/2" Circular Saw	234	135
6404	3/8" Drill Rev. 0-2100 rpm 2A	104	58
6510LVR	3/8" Drill Rev. 0-1050 rpm	149	83
6013BR	1/2" Drill Rev. 6 amp	258	139
5402A	16" Circular Saw 12 amp	662	355
3612BR	3 HP Plunge Router	377	165
9401	4" x 24" Belt Sander w/bag	337	169
4302C	var. speed Orbital Jig Saw	302	159
5077B	7-1/4" Hypoid Saw	255	138
LS1440	14" Mitre Saw	744	449
LS1030	NEW 10" Mitre Saw	420	225
5007NB	7-1/4" Circular Saw 13 amp	210	112
3612B	3 HP Plunge Router sq/base	377	165
2012	12" Portable Planer	895	455
LS1011	10" Slide Compound Saw	842	435

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	377	275
SFN2	Finish. Nailer 1-1/2" - 2-1/2"	571	395
SN325	Nailer 1-7/8" - 3-1/4"	665	455
SN4	General purpose 2" - 3-1/2"	685	475
LS2	Pinner 5/8" - 1"	351	255
SKS	Stapler 5/8" - 1-1/2"	351	255
LS5	Pinner 1" - 1-1/2"	399	285

BOSTICH AIR NAILERS

N60S-1	Stick Nailer Super Sale		389
N80C-1	Utility Coil Nailer	845	409
T36-50	Sheatth & Decking Stapler	595	334
N12B-1	Coil Roofing Nailer	845	415
N60FN-2	Finishing Nailer	625	335
T31	Brad Nailer	270	152
CWC100	1 HP Pancake Compressor	445	295

SKIL SIZZLERS

3810	10" Mitre Saw	263	225
3810S	3810 w/60 tooth Carbide Blade		245
77	7-1/4" Worm Drive Saw	230	144
77-04	77 saw w/case,car bld,fnc&lube	292	189
5510	5-1/2" Circ. Saw 6.5 amp	165	109
5825	6-1/2" Worm Drive Saw	246	159
2735-04	12V cordless Drill Kit	210	135
1605-02	NEW Biscuit Jointer w/case	200	119

PANASONIC CORDLESS

EY6205BC	NEW variable speed 12 volt Drill w/15 minute charger & case	390	179
EY6005B	12V cdls Drill w/1 hr charger	315	149
EY6200B	NEW 2 speed 12 volt Drill D-handle with 15 minute charger	350	178
EY6281BC	NEW variable speed 9.6 volt Drill w/15 minute charger w/case	350	169
EY571B	var. speed 9.6 volt Drill Kit	239	128
EY6207BC	NEW 12 volt 1/2" Drill w/keyless chuck var. spd w/15 min. charger & case	421	219

LEIGH DOVETAIL JIGS
D1258R-12-List 329.00-Sale 255.00
D1258R-24-List 399.00-Sale 299.00
LEIGH INSTRUCTIONAL VIDEO SALE 29.00

MMTA	24" Mort. & Tenon attachment	299	165

HITACHI TOOLS

P12RA	NEW 12" Planer/6" Jointer	1555	819
P12R	NEW 12" Portable Planer	1185	619
C7BD	7-1/4" Circular Saw	230	129
M12V	NEW 3 HP var. speed Router	447	225
TR12	Plunge Router 3 HP	354	167
F1000A	12" Planer/6" Jointer	2835	1489
C10FA	10" Deluxe Mitre Saw	538	275
C12FA	NEW 12" Mitre Saw	632	285
C8FB	8-1/2" Slide Compound Saw	899	445
C15FB	15" Mitre Saw	745	375
FREUD LU85M015	15"c/bld 108 tooth	180	105

DELTA TOOLS

34-444 Table Saw Complete w/1-1/2 H.P. motor & stand
609.00

34-445-34-444 Table Saw complete w/30" Unifence
819.00

37-154 DJ15 6" Jointer w/3/4 H.P. motor
1069.00

28-283 14" Band Saw w/enclosed stand 3/4 H.P. motor
729.00

70-200 NEW 20" Drill Press
759.00

17-900 16-1/2" Floor Drill Press
385.00

40-601 18" Scroll Saw w/stand and blades
699.00

DELTA #34-080 10" MITRE BOX XTRA SPECIAL
195.00
List 289.00

PIRANHA By B & D CARBIDE TOOTH BLADE

Model #	Dia.	Teeth	List	Sale
73-716	6-1/2	18	13.70	7.35
73-717	7-1/4	18	13.90	7.99
73-737	7-1/4	24	17.20	9.29
73-757	7-1/4	40	31.30	16.79
73-759	8-1/4	40	44.65	24.99
73-719	8-1/4	22	19.65	11.95
73-715	5-1/2	16	13.70	7.99
73-740	10	32	32.98	15.95
73-770	10	60	67.02	29.95
73-711	10	50	65.08	29.95

PORTA NAILER

401	Porta Nailer complete	265	189
501	Face Nailer complete	265	189

We stock genuine Porta nails !

BAUER LADDERS

30404	4' Fiberglass 300 lb rating	155	60
30405	5' Fiberglass 300 lb rating	174	70
30406	6' Fiberglass 300 lb rating	190	80

SUMMER KIT SPECIALS

6093DWH	Makita cdls var. spd Drill Kit w/clutch & brake. Includes extra battery & holster	313	165
9850K	Porter Cable cordless variable speed Drill Kit. Includes extra battery	288	169
7334K	Porter Cable 5" Random Orbit Sander with case & 1 roll 100X & 150X discs	253	149
7335K	Porter Cable 5" var. spd Random Orbit Sndr w/case & 1 roll 100X & 150X discs	273	159
7336K	Porter Cable 6" var. spd Random Orbit Sndr w/case & 1 roll 100X & 150X discs	278	165
555K	Porter Cable Plate Biscuit Jointer with case & 1000 assorted biscuits	339	189
JS100K	Freud Plate Biscuit Jointer with case & 1000 assorted biscuits	351	184
1581VSK	Bosch Top Handle Jig Saw with case & 30 Bosch blades	305	185
1582VSK	Bosch CLIC Barrell Grip Jig Saw with case & 30 Bosch blades	305	185

BIESMEYER FENCES

B-50	50" Commer Saw Fence	329	295
T-SQUARE 52	52" Homeshop Fence	249	235
T-SQUARE 40	40" Homeshop Fence	242	209

WEDGE SMART LEVEL

SM-TR2	2 FT Level w/sensor	120	105
SM-TR4	4 FT Level w/sensor	150	125
SM-TR6	6 FT Level w/sensor	180	155
SM-PR2	2 FT Pro Level w/sensor and free case Special Sale		99.95

JORGENSEN I-BAR CLAMPS

Model	Size	List	Sale
7224	24"	31.46	16.95
7236	36"	33.77	17.95
7248	48"	37.12	19.75

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.00	11.95	62.95
#1	10"	6"	21.76	12.99	71.49
#2	12"	8-1/2"	24.95	15.95	81.89
#3	14"	10"	31.61	18.95	104.95
#4	16"	12"	41.11	24.89	146.85

JORGENSEN STYLE 37 2-1/2"Throat 1/4"x3/4"

Item#	Jaw Length	List	Sale	Box of 6
3706	6"	9.86	6.49	36.55
3712	12"	10.92	6.99	39.75
3718	18"	12.05	7.75	42.99
3724	24"	13.16	8.39	47.75
3730	30"	14.70	9.55	53.45
3736	36"	16.05	10.39	58.75

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	13.61	7.99	84.99
52	1/2" Black Pipe Clamps	11.37	6.50	69.50

BOSCH

1581VS	Top Handle Jig Saw	265	132
1582VSC	NEW CLIC Barrell Jig Saw	265	132
Bosch Metal Case for above Jig Saws		34	30
Bosch 30 blade assortment for Jig Saws			25.99
1942	Heat Gun 600° - 900°	111	69
1272D	3" x 24" Belt Sander with bag	329	169
1273D	4" x 24" Belt Sander with bag	345	178
11-212VSR	Bulldog 3/4"SDS Rtry Drill	370	194
1194VSR	1/2" var. speed Hammer Drill	264	155
1194VSRK	above Hammer Drill w/case	292	179
1608	5.6 amp Laminate Trimmer	149	85
1609K	Lam Installers Kit with 1609	309	168
1601	1 HP Router	184	99
1602	1-1/2 HP Router	215	122
1603	1/2 HP D-handle Router	252	139
1604	1-3/4 HP 2 Handle Router	236	118
1604K	Same as above w/case & acc	287	165
1606	1-3/4 HP D-handle Router	273	148
3259	3-1/4" Planer w/blade guard	239	120
3258K	3258 Planer w/steel case	265	142
3270D	3" x 21" Belt Sander with bag	260	129
1273DVS	var. spd 4" x 24" Belt Sander	370	189
1611	3 HP Plunge Router	386	198
1611EVS	3 HP variable speed Router	448	232
1651	7-1/4" Circ. Saw drop foot	179	109
1632VSRK	Recip Saw 8.4A orb-v/sp	225	148
3050VSRK	9.6V cdls v/sp Drill Kit comp	256	132
1370DEVS	6" Random Orbit Sander w/case, sandpaper, sponge pad & buffing pads	481	299
3283DVS	5" Random Orbit Sander	159	95

ELU BY BLACK & DECKER

Model		List	Sale
3338	2-1/4 HP v/spd Plunge Router	427	249
3304	1 HP var. spd Plunge Router	292	178
3375	3-1/8" Univ. planer 7.2 amp	313	158
3380	Biscuit jointer with case	542	255
4024	3 x 21 var. speed Belt Sander	322	188

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	100	59
2600	3/8" Drill 0-1200 rpm 4.5 amp	142	84
1703	10" Mitre Saw w/73-770 blde	313	179
2694	NEW 7-1/4 Super Sawcat	248	149
2695	NEW 8-1/4 super Sawcat	271	159
4011	1/4 sheet Palm Sander	82	62

JET TOOLS

JBS-14CS	NEW 14" Band Saw 1 HP	579	405
JTS-10	10"Table Saw w/std 1-1/2 HP	585	459
JJ-8	8" Jointer 2 HP	1325	945
DC610	1 HP Dust Collector	321	225
DC1182	2 HP Dust Collector	577	405
DC1883	3 HP Dust Collector	850	625
JJ-4	4" Jointer 1/2 HP	398	275
JJ-6CS	NEW 6" Jointer 3/4 HP	579	405
JWP12	12" Portable Planer	628	365
JSG-6	6" x 48" Belt & 12" Disc Sndr	749	489
JDP10	NEW 10" Bench Drill Press	209	179
JDP14M	NEW 14" Bench Drill Press	339	285
JDP17M	NEW16-1/2"Bench Drill Press	399	365

RYOBI SPECIALS

JP-155	6-1/8" Jointer/Planer	611	298
R500	2-1/4" HP Plunge Router	331	155
TS-254	NEW 10" Mitre Saw	397	198
TS-254K	above Saw with acc. kit & B&D 73-770 carbide blade	495	245
AP10	10" Surface Planer 13 amp	820	349
RA200	8-1/4" Radial Arm Saw	520	245
RE600	3 HP Plunge Router	431	205
BE424	NEW 4" X 24" v/spd Belt Sndr	341	165
BE321	3" x 21" var. spd Belt Sander	272	129
SC160	NEW 16" Bench Scroll Saw	261	139
TFD17VRK	9.6V cordless Drill Kit	292	145
TFD220VRK	12V cordless Drill Kit	325	165
JM100K	NEW Biscuit Jointer w/case	431	209
RS115	NEW4-1/2"v/sp Rdm Orb Sndr	134	75
BT3000	NEW 10" Table Saw	699	539
W660	BEST BUY 7-1/4"Circ Saw 13A	179	88

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	559
STANDARD 10	"Professionals Choice"	499	399

PORTER CABLE

690	1-1/2 HP Router 8 amp	240	129
691	1-1/2 HP Router D-handle	260	135
695	1-1/2 HP Router/Shaper	335	198
696	HD Shaper Table	185	115
351	3" x 21" Belt Sander w/o bag	245	127
352	3" x 21" Belt Sander with bag	255	129
360	3" x 24" Belt Sander with bag	330	174
361	3" x 24" Belt Sander w/o bag	310	166
362	4" x 24" Belt Sander with bag	345	184
363	4" x 24" Belt Sander w/o bag	330	179
315-1	7-1/4" Top Hdle Circular Saw	210	114
9315-1	315-1 comp. w/cs & carb bld	240	129
617	7-1/4" Pushhandle Saw	210	114
9617	617 comp. w/cse & carb blde.	240	129
314	4-1/2" Trim Saw	240	124
97750	1/2" v/spd Hammer Drill w/cse	260	159
9548	X HD Bayonet Saw w/case	320	195
9629	Recip Saw var. speed 8 amp	250	139
9627	Recip Saw 2 speed 8 amp	235	128
666	3/8" HD v/spd Drill 0-1200 rpm	200	119
621	3/8" HD v/spd Drill 0-1000 rpm	170	95
320	Abrasive Plane 3 amp	190	109
9118	Porta Plane Kit 7 amp	360	195
7545	0-2500 Drywall Gun 5.2 amp	185	104
505	1/2 sheet Pad Sander	210	112
7511	3/8" var. speed Drill 5.2 amp	200	110
7514	1/2" var. speed Drill 0-750 rpm	210	117
7515	7514 with keyless chuck	215	122
7649	Barrel Grip Jig Saw 4.5 amp	250	149
330	Speed Block Sander 1/4 sheet	102	55
555	Plate Biscuit Jointer w/case	315	165
345	6" Saw Boss 9 amp	180	99
9345	345 comp. w/cse & carb blde	220	124
100	7/8 HP Router	175	95
5116	Omni-Jig	400	259
9647	TIGER CUB Recip. Saw	195	115
9637	Full var. spd Recip Saw 8amp	250	134
7519	3-1/4 HP Router 2 Handle	410	224
7518	3-1/4 HP 5 speed Router	475	259
7536	2-1/2 HP 2 Handle Router	355	199
7537	2-1/2 HP D-Handle Router	375	209
7538	3-1/4 HP Plunge Router	410	224
7399	5.6 amp Drywall Cutout Unit	140	75
7310	5.6 amp Laminate Trimmer	150	85
7312	5.6 amp Offset Base Lam Trim	215	119
7319	5.6A Tilt Base Lam Trimmer	170	105
97310	Laminate Trimmer Kit comp	345	185
7334	5" Random Orbit Sander	210	119
7335	5" var. spd Rndm Orbit Sndr	230	129
7336	6" var. spd Rndm Orbit Sndr	235	134
693	1-1/2 HP Plunge Router Base	295	165
6931	Plunge Router Base	120	75
7539	NEW3-1/4HP v/sp Plge Router	475	265

NEW CORDLESS

9850	12V Drill w/case 0-400 rpm	240	135
9851	9850 with keyless chuck	240	135
9852	12V Drill w/case 0-1000 rpm	210	159
9853	9852 with keyless chuck	210	159
9854	12V 1/2" Drill w/cse 0-360rpm	280	165
8500	12 volt battery for above drills	62	37

FREE FREIGHT TO THE CONTINENTAL STATES ON EVERY ITEM • GIFT CERTIFICATES NOW AVAILABLE

Print this article

RECYCLED REDWOOD

Smith and Hawken, a retailer of garden tools and equipment headquartered in Mill Valley, California, has developed a sensitivity to their customers' environmental concern. Their catalog portrays a garden potting bench constructed of "unfinished redwood reclaimed from old barns and warehouses."

In 1990, the same company researched a sustainable source of teak for its line of garden furniture. Java, devoted to teak plantations, got the nod.

FARMS TURN GOLDEN

Seventy thousand American Tree Farm System members celebrate 50 years of growth this year. The system began in Washington state in 1941 with a Weyerhaeuser Company property the size of Philadelphia.

Tree farms come in all sizes, with both industrial and private ownership, but collectively they represent 95 million acres growing 95 billion trees, says the parent American Forest Council.

To plant that many trees, you need to set one tree per second, 24 hours a day, 365 days a year, for more than 3,012 years!

BABY BOOMERS GROWING UP

According to the National Forest Products Association, about 23 percent of all softwood harvested in the U.S. comes from plantations established since the 1940s.

SAWS THAT SHOULD KNOW WHEN TO SAY WHEN

Lumber-mill workers in the Pacific Northwest sometimes refer to a circular wobble blade, used for sawing dadoes and grooves, as a drunken saw because of its unsteady travel.

FRONT AND CENTER: WOOD READERS WHO MAKE A DIFFERENCE

Name: Neal and Lorraine Asten
Ages: 67 and 65
Home: Henderson, Nevada
Occupation: Retired
***WOOD*® connection:** Subscriber since 1989

When Neal took early retirement from his job at a chemical plant in 1977, he hardly knew a lick about woodworking. He did have a workshop, though, and tools enough that he had accumulated to make an occasional garden ornament, birdhouse, or whirligig.

A few days after Christmas that year, Neal, exasperated by his decline into television watching, told Lorraine, "We've got to find a better way to spend our time." Making toys for needy kids came to mind almost immediately.

By the following Christmas, the pair had made nearly 1,800 toys to give away. "We started with a couple of designs from magazines, then added our own," Neal recalls. "And we enjoyed it so much we were spending 50 to 60 hours a week in the shop."

Neal and Lorraine have been making toys for 13 years now, without letup. Their toys reach deserving children through friends and Las Vegas-area agencies, and wind up in Canadian hospitals, in Mexican orphanages, and in the hands of kids as far away as Palestine.

"I helped a newly retired fellow in Florida get going making toys, too," says Neal. "I like to see people get into this."

The Astens say their biggest problem is time, since they spend three days a week selling some of their shop-made items at a local craft shop, and the other four days woodworking. "There're just not enough hours in the day and days in the month for us," complains Neal. "We have 6,000 to 8,000 parts to cut out this year."

Neal and Lorraine Asten stand behind some of their annual toy production that goes to needy children.

Do you know a subscriber who makes a difference? Send details to: Front and Center, WOOD magazine, P.O. Box 11454, Des Moines, IA 50336-1454.

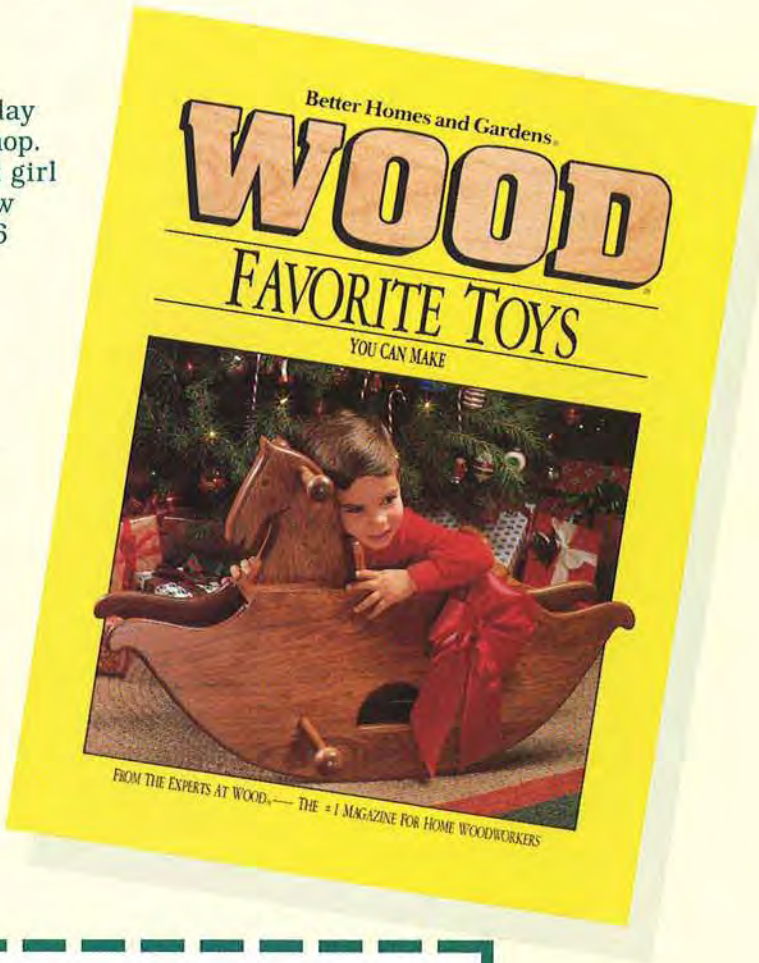
Photograph: John Dize Illustrations: Jim Stevenson

Make an Heirloom Toy for Holiday Joy

Fill a child's world with delight this holiday season by giving a handmade toy from your workshop. Better yet, build a sackful to please every boy and girl on your list. You can do it with the help of our new book "Favorite Toys You Can Make". Included are 26 timeless designs, ranging from easy-to-make playthings to more challenging projects.

This all new, hard-cover, 96-page publication (which includes full-color photos of every project), presents toys for a variety of ages and in a range of sizes. Best of all, these toys are heirlooms in the making. While any child could ride happily into the sunset on the ever-popular Rocking Horse, for instance, its rugged construction makes it sturdy enough to withstand a band of buckeroos.

"Favorite Toys You Can Make" walks you through every project with a materials list, easy-to-understand instructions, detailed drawings and handy tips from the WOOD Magazine shop. Order your copy now to ensure plenty of shop time before the holiday rush.



Yes! I want to make the most popular wooden toys from WOOD® Magazine. Please send me " Favorite Toys You Can Make" for just $14.95 U.S. ($16.95 Canadian). Price includes postage and handling.

NAME:_____

ADDRESS:_____

CITY:_____ STATE:_____ ZIP:_____

❑ Enclosed is my check or money order made out to WOOD Magazine.

❑ Please bill my ❑ MASTERCARD ❑ VISA

Card #_____ Exp. Date_____

Signature_____

MAIL TO: "All-Time Best Toy Projects", P.O. Box 9255, Dept. WT12, Des Moines, IA 50306. Allow 4-6 weeks for delivery. 100% Money Back Guarantee.

CRAFTSMAN®

All You'll Ever Need in a Power Tool.

**From project start to a perfect finish,
you can always count on Craftsman to pull you through.**

Sure, you could pay more for a tool, but you'll never need to. Because the tools in our Contractor Series are engineered to handle the most demanding projects.

Rigorous life testing on every tool backs up our promise of Craftsman reliability. For example, we ripped 40,000 feet of 2″ x 6″ stock in just four working days with our Contractor Series tablesaw. We repeatedly jam-tested our 10″ compound miter saw for 2,000 cycles. The motor was then cycle-tested at 150% of its rated amperage for 167 hours. The ability of both tools to withstand this abuse was rated excellent. They continue to be used daily in our engineering workshop.

There's more about every one of the tools in the Contractor Series that will impress you. And you don't have to call your nearest distributor to see for yourself. Just zip on down to your Sears store.

CRAFTSMAN®

Only at Sears

Horsepower shown on tools is maximum developed.